

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

Vol. XI., No. 5.

MAY, 1860.

New Series, Vol. 2., No. 5.

THE FARMER AND PLANTER



PRICE, - \$1 A YEAR, ALWAYS IN ADVANCE.

PUBLISHER'S CORNER.

AMENDMENT OF THE PREMIUM LIST.

We are pleased to see the announcement of the following amendment of the Premium List of the State Agricultural Society. We know full well that the Executive Committee have always been anxious to give our low-country friends an equal position in the Society with those of other sections, and we sincerely trust the following Premiums will be well contended for. If our friends in the Rice and Long Staple section will assist the Executive Committee, by their counsel, we assure them their interests will be as well eared for in the Society as those of other portions of the State. Try it, gentlemen, for one year anyhow :

FIELD CROPS—LONG STAPLE COTTON.

The greatest production upon five acres of restored land, by the aid of <i>domestic manures</i> , with the mode of cultivation, the amount and kind of manure used, the preparation of the soil, period of planting, the number of times plowed and hoed, the variety of cotton, the land to be measured, and the cotton weighed and vouched for by affidavit	\$30
Same, upon two acres, under the same requisitions	20
Greatest production upon one acre, under the same requisitions	10
Five acres, under the same requisitions, by the aid of <i>mineral or imported manures</i>	30
Same, upon two acres, under the same requisitions	20
One acre, under the same requisitions	10

Certificates of the area planted, manures used, mode of culture, &c., with the market value of the cotton, fixed by three Charleston Factors, to be forwarded to the Secretary by 1st January next.

For the best Essay on any other Agricultural subject, not embraced in the Premium List, \$20.

R. J. GAGE, Secretary.

"IT WILL NEVER DO TO GIVE IT UP SO, MR. BROWN."

We are fearful that our announcement of the great increase to our subscription list has caused some to think we had cried "enough." Not so, gentlemen, "by a long shot." Like *Oliver Twist* we "call for more." The fact is, our list was so low that it required a number of such hearty lifts to get the *Farmer and Planter* on firm ground. Since our last issue our increase has been like the old lady's plums in the pudding—"few and far between." From all parts of the State we hear of many "*going to subscribe next year.*" All very good, gentlemen—we shall be pleased to receive your subscriptions then; but such was told us last year, and, in all sacredness of feeling, we say "now is the accepted time," *now is the time to save the paper.* Work while there is a paper in existence—the day may come when you will have no journal to work for. Again, we say to those who did well in March, and to those who did nothing, "It will never do to give it up so." Five hundred new subscribers during this month would enable us to announce the fact that the *Farmer and Planter* was a *fixed institution*, in South Carolina, Greeley to the contrary notwithstanding. Who will get the \$50 Pitcher? Nobody's entitled to it yet.

OUR ADVERTISING SHEET.

It will be seen that our advertising sheet has dwindled down to four pages. The agricultural journals of Augusta and Baltimore have from twenty-four to fifty pages of advertisements, and through these mediums our planters have been induced to trade almost exclusively at those cities. The fact is, there is not enough competition in the various businesses of Columbia. Our merchants do not seem desirous of extending their business; and from this fact we are induced to believe they are either making their fortunes, or are content to make just enough to "keep their heads above water." If the former, there is room for more; if the latter, it would be better for the city if a few enterprising capitalists would settle amongst us, and wake them up. Columbia should use all the means in her power to attract business. Advertising is the most potent.

THE FIREMAN'S TOURNAMENT.

This interesting exhibition will take place in this city, on the 16th of this month, and we would advise our friends in the country to make it convenient to visit us on that occasion. It will be a grand display of noble men and beautiful engines. Among the latter will be a Steam Fire Engine, the sight of which is worth a day's journey. We understand the railroad companies have reduced the fare, for the occasion, to half price, or one fare for the trip.

GIVE YOUR NAMES AND POST OFFICES.

We are aware that Editors and Publishers are supposed to know everybody and everything, but we assure our friends *we* don't know everybody's post office or handwriting. We often receive curious epistles. Some order the paper sent to them, and do not give us their name; others date their letters at their plantations, and forget to tell us the name of the Post Office. Persons should be particular to give the name and Post Office plainly.



VOL. XI.

MAY, 1860.

NO. 5

R. M. STOKES, }
PROPRIETOR.

COLUMBIA, S. C.

{ NEW SERIES
VOL. 2, No. 5

BAREFOOTED NOTES ON SOUTHERN AGRICULTURE.

BY AN OLD GRUMBLER.

NO VIII.

*Continuation of Chapter on Grasses, &c.—Sedge Family.
—Nut Grasses.—Mosses in the Bullrushes.—The Beauty
of Broomsedge, &c.*

The sedge family consists of *Cyperus* (galingale), *Scirpus* (bulrush) and *Carex* (sedge), rush-like or grass-like herbs, with fibrous roots, solid culms, and closed sheaths, embracing over fifty genera—all remarkable for their worthlessness, and for their prevalence on swampy, neglected and valueless lands. The herbage of this order, (*Cyperaceae*), unlike a larger number of the *Gramineae* or true grasses, contains but little saccharine matter, and are of but little value, and less relished by stock. We will describe a few of each of the three genera above mentioned, selecting such as attract the notice of the agriculturist.

CYPERUS GALINGALE.

1. *Cyperus Strigosus*—Bristle-spiked Galingale.—This is not a very troublesome species, but is one of the most conspicuous of the tribe, and found in the swampy meadows of our mountain farmers.

2. *Cyperus Plymatodes*—Nut-grass of Florida.—The root of this species creeps extensively, and sends up numerous suckers, the fibrous branches terminating in a tuber the size of a small pea. It is found in Florida, on Indianola fields, the edges of hammocks, in rich pine barren, and is a troublesome pest to planters. Good cultivation will eradicate it, and if the crop is regularly worked, this grass seems to be not very injurious to its growth.

NEW SERIES, VOL. II.—17

It is, however, one of a hated and useless family, and should be watched with vigilance, and never be allowed to encroach upon cultivated fields. It is of no value as a grazing grass, and the nuts are only relished by starved swine.

3. *Cyperus rotundias*, var: *Hydra*—Nut-grass, Coco-grass, of South Carolina.—Characterized by creeping roots, its branches ending in tubers half an inch in diameter, which are of a dark color.—This is the greatest pest to agriculturists in the South. It is an inhabitant of the four quarters of the globe, and its unhallowed origin uncertain. Its process of reproduction is so rapid and interminable, that a net-work of creeping roots and tubers soon invest the soil, to the exclusion of all other plants. Its tenacity of life is so great that nothing short of fire will destroy the germinating powers of the tubers. These tubers will vegetate after having been under houses for half a century, instances being on record where a crop sprung up in a few days after the burning of a house of more than that age. It can only be eradicated by ploughing the land every day during the season of its growth. We have recommended high manuring previous to heavy seeding in Winter oats or barley, to be followed immediately after harvest with peas broadcast. The constant shade of these crops causes the nut-grass to spindle and die out. The process must be kept up, year after year, until every spear disappears.—This grass is a great curse to many acres of the finest cotton and cane lands in the South. Beware of it as you would of a thief at night.

4. *Cyperus Esculens*—Sweet grass-nut chufa.—An edible variety, yielding a large quantity of sweet tubers, which have the flavor of chesnuts when dried. This variety is easily eradicated, and

is good for swine in winter. It was first introduced by Africans from Congo, Guinea, and latterly, by the Patent Office, from Spain.

The Papyrus, which was used for writing, prior to the manufacture of rag paper, was obtained from a species of this genus—*Cyperus Papyrus*.

SCIRPUS—BULRUSH.

1. *Scirpus pungous*—Sharp pointed Scirpus—Chair-maker's rush.—Found in swampy meadows and muddy margins of streams—salt and fresh.—In such a situation was found Moses, and in that connection we first find this plant mentioned.—This is the common chair-maker's rush, and is neither troublesome or difficult to get rid of—by draining or other proper management of wet lands. It has no value for grazing, but is eagerly devoured by cattle.

ANDROPOGON—SEDGE.

The sedge family is a very large one, and is of no use in the South, save as a shield from outworn lands.

1. *Andropogon dissitiflorus*.—Broomsedge is a great protection to fields not cultivated or regularly set in grass, and in early spring furnishes a fresh bite for cattle. A sedge field is good range for sheep in Winter, as the green leaves always found about the roots of the stools, at the bottom of the old culms, are nutritious and palatable food for them. We must, in the absence of the better systems of Agriculture, shield this grass from the sweeping denunciation that all this family are valueless.—Contemplate fields once smiling with groaning harvests of golden grain or snowy cotton—see them exhausted, seamed and gullied' "turned out" to rest in the hot sunshine, bleeding at every step.—The first year not a sheep's bite grows upon its bare bosom. Now comes on a little crop of scattering sedge—it lays hold of the impoverished soil, and with pitying grace, shields the bare bosom of the earth from the scorching rays of the sun. Each year a thicker growth springs up over the land, and the decaying mass of luxuriant straw soon adds substantial fertilizing ingredients to the soil. The briars now creep in, and are followed by the pines and the elms, the cedars and the ash; and here and there an acorn, dropped by the striped ground squirrel, sprouts into an oak, or stray seeds of the persimmon and the mulberry add useful tenants to the increasing thicket. When all these have progressed so as to shade the land, the mission of the broomsedge has ended, for it loves light and sunshine, and like an industrious man, pines in the shade. What a lesson is taught to us by the habits and growth of

this despised grass? Nothing less than that there is a use and purpose for everything living, either animal or vegetable. Upon the very brink of the gully does this grass cling to the earth in which it is rooted, with a vital power, defying the rain torrents which sweeps down its natural declivity.—It chokes up the washes—plants itself in the bottoms of dry ditches, and everywhere in our Southern land, protects that soil which man has abandoned to the certain waste of the elements.—*If we will allow our fields to become impoverished*, let us give them up to the dominion of the sedge, and encourage its growth by protecting our waste lands from the incursions of grazing stock. Do this, planters of the South, to stimulate the growth of secondary forests, and if your country does not vie with others in abundant fertility, it will have preserved to it some natural elements of beauty, which will make it as attractive to the eye as the home of childhood always is to the heart of man.—*Carissima Carex*.

GUANO USED AS A FERTILIZER TO RICE GROWN UPON BAY-LANDS.

I have, for the past six consecutive years, applied the Peruvian Guano as a fertilizer to a description of lands very common in our river swamps known as bay-lands.

The results of these trials have been successful, beyond what I hoped for, or could have expected.

Having carefully kept notes during this period, from 1854 to 1859 inclusive, I have not relied upon my memory in any single instance. These experiments, with their results, cannot fail to prove interesting, and perhaps instructive; and I claim for the following communication the only merit it deserves—that of being accurate.

An increase of five bushels per acre will add to our crop of rice very nearly 20,000 tierces. This is a matter worthy the consideration, and deserving the attention of all who wish to improve a very important branch of agriculture. *Non nobis solum*.

BAY-LANDS.

The kind of land about which I make the following remarks, is met with in considerable proportion upon the rivers that empty through Winyaw Bay, and is, perhaps, common in other parts of the State.

It is not a productive soil, being at all times very uncertain and variable in its growth. Its characteristics are, as it occurs in this neighborhood, as follows: The land is almost (and occasionally entirely) destitute of clay, even when turned to a considerable depth. It is dry and husky, and burns readily, giving out a disagreeable, pungent smell. When perfectly dry, it resembles a coarse sponge, being open and fibrous, and will float.

From this peculiarity, great care must be observed, when flowing the fields after they are planted, to let on the water very gradually, for otherwise the whole surface of the field will float and drift.

The lands being warm and well drained, it is an easy matter to get a "good stand"—a well-set crop upon them.

For the first six weeks the plant grows well, and presents a better appearance than rice grown upon stronger and stiffer lands. After this it is very apt, almost sure, to "check," sometimes changing its color to a brownish red, and does not recover, or begin to flourish again, for the space of two or three weeks.

In its best condition the plant is very inferior to the growth upon stiff clay soils—does not grow as tall, and shoots out small, although generally well-filled ears.

I cultivated some lands of this description for fifteen years, with very poor success. Lime—both stone and shell—applied to the extent of from fifty to one hundred bushels per acre, failed to give any increase sufficient to repay for the cost and trouble. Nor could I perceive any benefit to accrue to them from naked fallows. The yield, during this time, varied from twenty to twenty-five bushels per acre, seldom reaching twenty-five bushels, and generally falling far short of it.

In 1854, I determined to apply guano to these lands, with the hope of reaping forty bushels per acre, considering that such a product would be a fair compensation for labor bestowed upon the fields, and for the cost of the guano. I have invariably used the Peruvian, as it is the best and most concentrated.

The time of application has always been at the second hoeing of the rice. In my first experiments a ton (2,240 lbs) to ten acres, gradually extending it to fifteen acres—about one hundred and fifty pounds per acre.

These lands having no clay, the guano has, in all cases, been mingled with twice, sometimes thrice, its bulk of clay (in measure), and I have good reason for believing that this top-dressing has been of much benefit, both as a means of fixing the volatile gases of guano, and as an important addition to the soil.

The effect of guano applied in this manner is seen in the second year's growth; and I feel very confident that the nature of the soil will, in a few years, be effectually changed, by continuing its use. At the second hoeing, some hands precede the hoeers, and strew the mixture of guano and clay in the alleys; and when the field is hoed through, it is flowed and "laid by."

A very marked change is soon observed to take place. The plant improves in color, grows luxuriantly, and continues to improve, until the ear is matured and shot out.

It is important to ascertain how far this concentrated manure will admit of distribution, without impairing its efficacy. I have extended the ton as far as sixteen (16) acres, which, at the present price of guano, is about \$4 per acre (1859). The admixture with clay makes it easier to distribute, and prevents its caustic effects upon the hands of the workers, as well as upon the plants.

The following statement embraces the results of these applications:

June, 1854.—A ton of Peruvian guano, applied

to two portions (five acres each) of separate fields—inferior bay-lands—product hitherto uncertain and variable, seldom reaching twenty-five bushels per acre. Early in June: Guano, mingled with five barrels of gypsum and an equal bulk of red clay, distributed equally in the alleys, hoed in and the fields flowed; a speedy change took place in color and growth—a very marked contrast in appearance to the rest of the field.

Product from five acres	-	-	200 bushels.
" " "	-	-	205 "

being at the rate of forty and of forty-one bushels per acre.

End of May, 1855—Second hoeing.—A ton of guano, mingled with four barrels of gypsum, was applied to six acres each, of two separate bay-fields, with an equal bulk of red clay, with the same effect as last year upon the growth and appearance of the rice.

Product of six acres bay	-	-	264 bushels.
" " "	-	-	270 "

being at the rate, respectively, of forty-four and forty-five bushels per acre.

Late in June, 1856—Second hoeing.—This trial of guano was the least satisfactory in six years.—The effect, however, was marked and immediate, and the result favorable by comparison.

A ton and a half of guano mingled with twice its bulk of red clay (no gypsum) was applied to the most inferior of the bay-fields—eighteen acres; the field was hoed and flowed immediately after, as upon former occasions.

An adjoining field of sixteen and a half acres, of similar character, was planted at the same time, early in April, after a naked fallow of one year; the two fields were hoed twice; guano applied to the former late in June, and flowed. It was a bad season for rice, especially upon these lands.

Eighteen acres, guanoed, produced twenty-five bushels per acre.

Sixteen and a half acres, fallowed, produced sixteen bushels per acre; being nine bushels per acre in favor of guano.

Early in June, 1857.—A ton of Peruvian guano applied to upper bay-field—sixteen and a half acres—mingled with blue clay from the river swamp, dried and pulverized; a bushel of guano to three bushels of clay, just previous to second hoeing.—The field was then flowed. It was remarked for the vigorous and luxuriant growth upon it, and shot out thick and large ears. The field is a pure bay soil. The product was:

Upper bay, sixteen and a half acres, eight hundred and fifty bushels, being somewhat over fifty-one bushels per acre; this is the field that in 1856 yielded, after a year's fallow, only sixteen bushels per acre.

The addition of blue clay doubtless produced good effects, both mechanical and chemical, fixing the volatile properties of guano, combining with the acids of an impure oil, and acting as a top-dressing to give consistency to the surface.

In February, 1858, six acres of the middle bay-field (the field of eighteen acres) were sprinkled with gas-lime, after being turned by the hoe, at the rate of fifty bushels of lime per acre. It was allowed to remain as a top-dressing until April.—

When the field was prepared for planting, the portion that had been limed was observed to crumble and pulverize more thoroughly than the remaining portion.

Late in June, at the second hoeing, three-fourths of a ton of Peruvian guano was applied, mingled with thrice its bulk of blue clay to fourteen acres—the other four acres being treated with lime alone.

Results:

Product of fourteen acres, four hundred and sixty-five bushels, about thirty-three bushels per acre.

Product of four acres that were only limed, seventy-six bushels, being nineteen bushels per acre.—Giving an excess of fourteen bushels per acre in favor of guano.

At the same time, late in June, a bay-field of fourteen acres was also guanoed in like manner, with three-fourths of a ton, and thrice its bulk of blue clay, with the following result:

Fourteen acres bay, six hundred and twenty bushels; a little more than forty-four bushels per acre.

The above results are quite conclusive in favor of the good effects of this manure. The yield of forty-four bushels per acre is large for this description of land, and in the other field the difference of fourteen bushels per acre must be accredited to its use.

Having now "felt my way," and being convinced of the intrinsic value of guano when applied to very inferior rice lands, I determined, in 1859, to apply it in the same way as above told, to all the bay-fields. Four tons of Peruvian guano were applied late in June, mingled with twice its bulk of pure red clay. Results:

Upper-bay, sixteen and a half acres, eight hundred and eighty-four bushels—nearly fifty-four bushels per acre.

Mid-bay, eighteen acres, seven hundred and sixty bushels, being forty-two bushels per acre.

Barn-bay, fourteen acres, seven hundred and fifteen bushels, being fifty-one bushels per acre.

Branch-bay, seven and a half acres, four hundred and seventy bushels, being sixty-two and a half bushels per acre.

The overseer, Mr. M., wrote me 30th July: "The guanoed rice looks as well at this time as it can.—The two bays, upper and middle, and barn-field, look like 'new ground' rice!"

It will thus be seen, that not only has a uniform success attended the use of guano, but that there has also been a marked increase of product upon the fields where it has been applied. This is very important. It shows that there is an accumulative benefit derived from its use, that adds materially to its value.

It is important to add, that the guano should not be applied too early in the growth of the plant.—We have found from experience, that the best time is just preceding the "lay-by" flow.

In giving the foregoing statement, I am only influenced by a desire to impart to those engaged in like pursuits with myself, information that may prove valuable.

My bay-lands are now among the most productive. At one time they scarcely repaid me for the labor that was put upon them.

The important point established is, that guano, as a fertilizer, is eminently adapted to promoting and perfecting the growth of the rice-plant. It may doubtless be used successfully upon other kinds of soil. It will be seen that in my trials of it, (excepting one field, the mid-bay,) the yield of rice per acre was, at first, rather more than forty bushels, then reaching to fifty, fifty-four, and upwards of sixty.

In the case of the mid-bay, the first product was twenty-five bushels per acre, against sixteen bushels per acre from an adjoining field. The next trial gave thirty-three bushels per acre upon fourteen acres of this field guanoed, against nineteen bushels per acre upon four acres not guanoed, but limed.

The third and last trial gave forty-two bushels per acre upon the whole field. It must be borne in mind that I am treating of a very inferior description of soil.

The product upon the other bay-fields is very large, especially as two of them, viz: upper-bay and barn-bay, (yielding respectively fifty-one bushels and fifty-four bushels per acre,) were much injured by birds—certainly not less than at the rate of five bushels per acre.

It is a well-known fact, that these costly visitors invariably select the fields of most luxuriant growth. The respect, therefore, shown by them, the past season, to the growth of rice upon my bay-lands, was a willing tribute on their part to the virtues of guano—quite unsolicited on my part; but, as I have to pay for it, I will make good use of it, by adding their testimony in this place.

I close with one remark. Many of the properties, the most valuable, of guano, being of a volatile nature, it will prove good economy to mix it with pulverized clay. If sulphate of lime is added, it will "fix" these gases also, by uniting with them in chemical proportions.

Great care should be taken, when the field of rice is flowed, to retain the water for several weeks, taking in sufficient each day to keep up the "water-mark." Do not change the water.

It has frequently been asked, "Does guano exhaust soils?" I believe that just the reverse is true. The "*rationale*" of its action is, the imparting to soils of certain inorganic elements that these soils require. The organic elements of plants, we know, are derived chiefly from the atmosphere.—Guano restores the loss that all lands sustain by repeated cropping. This is more especially the case where, as upon our rice lands, there is no rotation.

"Claudite rivos, pueri,
Jam satis prata biberunt."

RICE PLANTER.

All leguminous plants, to which the clover belongs, are always greatly benefited with a sprinkling of plaster of paris on the leaves, when wet from dew or rain, and it will, therefore, be very beneficial to the clover.

THOUSANDS of lambs are lost for want of one night's shelter. Thousands of sheep are destroyed by constant shelter.

What sculpture is to a block of marble, education is to the mind.

POISONING LAND.

BY PROF. E. PUGH, PH. D., F. C. S.

Notwithstanding all that has been said and written, during the last few years, upon the subject of agriculture, the ideas of the great mass of the people, upon many points of the highest importance to agriculturists, are very much confused. Upon no questions is this more marked than upon those suggested by the words nutriment, stimulant and poison, in reference to the growth of plants.

Many farmers think that certain substances stimulate the land at first, and over-tax its powers, and ultimately *poison* it. Such ideas originate in conceptions obtained from false analogies, which men are too prone to draw between animal and vegetable life. The earlier vegetable physiologists were, for a long time, deceived as to the true character of vegetable growth in the same manner; but at present, scientific men are aware that no aid is obtained in studying vegetable physiology by the apparent analogies afforded by animal physiology. A difference of opinion sometimes exists, as to what is the correct definition of a *poison*, in regard to animal life. And a more difficult question might arise on the same subject with regard to vegetable life.

But waiving these difficulties we may get at a practical definition of what nutriment, stimulant and poison, applied to vegetable food, may mean, which will throw some light upon the subject we are considering.

1st.—NUTRIMENT.

Under this may be included all those elements, and combinations of elements, that are essential to healthy and vigorous vegetable growth, whether obtained from the soil or the air, which enters into the plant to form part of its substance.

These embrace about 13 different elements, all of which enter the plant, more or less, in combination with each other; eight of them *must come from the soil*, and the remainder *may* come from the soil, or from the air, or from both. Independent of vegetable growth, there is all the time a more or less active interchange of these latter elements between the soil and the air, so that it is difficult to decide how far they are obtained by the plant directly from the air through the leaves, or indirectly from it at the roots, through the soil; consequently while *all* scientific men admit that these eight substances *must always be present in the soil*, to ensure its fertility, there has been a difference of opinion as to how far it is necessary to add some of the remaining five to the soil to ensure conditions "amply sufficient for the purposes of agriculture." *If all of these substances are not accessible to the plant in the soil, or the air, it cannot grow.* At times some of them fail in the requisite quantity, and it becomes the duty of the farmer to find which they are, and to apply them in manures to the soil.

2d.—POISON.

All substances may be considered poisonous which are not included above (that is which do not enter the plant to form a part of the increase during healthy growth), and which, when placed in con-

tact with growing vegetable matter, are absorbed by it, and prove injurious or destructive to vegetable growth. This may include many combinations of elements, which, combined in other proportions or in different circumstances, might be nutritious; acids or alkalies might, when *alone*, act as poisons, when in the *combined* state, they would be nutritious. The products of decomposition of vegetable matters are, no doubt, in some instances, poisonous to vegetable growth; the ultimate cause of the disease to which some plants, as the potato or the clover, the vine, &c., in America and Europe are liable, may be due to poisonous products formed in the soil.

The theory of the rotation of crops, which at first was explained, simply by supposing different plants absorbed different substances from the soil, and while those of one plant were being removed by it, those of another were accumulating, has become more complicated of late, by certain considerations which seem to indicate, that substances poisonous to one plant and not to another, may disappear from the soil, during the growth of the latter, and hence, leave the land in a state adapted to the wants of the farmer.

All substances which are nutritious to plants in ordinary circumstances, will prove destructive to them if presented in too large quantity, and hence it is not always easy to decide what is a poison, in the sense of the definition just given.

3d.—STIMULANTS.

None of the substances which are usually considered stimulants, are such in the sense that this is applied to animal life. Nothing is more absurd and ludicrous than the common notion that certain substances, as guano, or plaster of paris, stimulate the land in any sense of the word.

It is not easy to apply this term to substances affecting vegetable nutrition, yet if we must use it, substances like lime, which do not afford nutriment directly to plants, in the same degree that they promote their growth, could more appropriately be called stimulants, than those just noticed. Some chemical substances which promote the sprouting and early growth of plants, without affording them any nutriment, might also be called *stimulants*, and others which retard this action might be called *sedatives*; but as these terms convey *improper meanings*, and imply that we know a great deal more about vegetable physiology than we do, it is best to discard them altogether.

PRACTICAL CONSIDERATIONS.

From the above we might infer,

1st. That soil to be productive must contain every one of about eight different substances, and four to five other substances must be present in the soil or the air.

2d. That if any one of these fails in the soil, barrenness will result, no matter how much of all the others may be present. Though a sufficient number of all the other substances were present to produce crops for one hundred years, *did it not fail, the absence of this one would render the soil barren.*

3d. If the soil contain a limited quantity of any one of these substances, and no more be added dur-

ing successive years, in which crops are grown and removed from the land, this substance must ultimately all be removed, and barrenness must result.

4th. If a soil be barren, owing to any of the above causes, the addition to it of the failing element will restore its fertility again, and in consequence of this fertility new crops may be raised, and hence new quantities of all the other seven substances removed from the soil. If this process be repeated, and by successive additions of the failing element, successive crops be raised, a second and a third element, will all be removed, and these, too, must be replaced in the same manner as the first, in order to maintain fertility. *The soil will be poorer after the addition of these failing elements, because with them we are enabled to raise crops which remove from the land, not only the elements added, but about seven other elements that were in it before.*

5th. The substances usually called stimulants are simply such as afford to the soil, certain elements of *nutrition*, which are not present in an available form for the demands of vigorous growth. They do not produce the crop, but, united with other substances in the soil and air, they do produce it.—They form a *part of a whole*, without which the plant cannot grow, just as the axle-tree of a wagon forms a part of the wagon, without which it could not move. Without the axle-tree the wagon could not be worn out, yet it would be a strange kind of logic which would infer, that, because the entire wagon was worn out *after* the addition of the axle-tree, that therefore the axle-tree had acted as a *stimulant* upon the wagon and worn it out; or that because the same result could not be obtained with the old wagon as with the new, therefore, the axle-tree had *poisoned* the wagon. Absurd as this kind of logic would seem, the farmer may rest assured that it is quite as rational as that which supposes certain substances to stimulate or poison the land. And the farmer might, quite as rationally, refuse to replace the broken axle of his wagon, because after doing so the wagon would be worn out, as to refuse to supply the failing element in his land, because the crops that would follow would exhaust the land of the substances that it already possesses.

These considerations may be illustrated by an *example*.

Suppose a soil to contain enough of an element A to raise wheat for four years; enough of an element B to raise wheat for six years; enough of C for eight years; enough of D for ten years; and enough of all the other substances S required for twenty years. If such a soil had been grown with wheat since 1856, we would have in

1860, all the A exhausted,
sufficient B for two years,
“ C for four years,
“ D for six years,
“ S for sixteen years.

This soil is barren now for want of A; let us add sufficient of A to last two years, and then we get two more crops, and we will have in

1862, all the A again exhausted,
“ B exhausted,
sufficient C for two years,
“ D for four years,
“ S for fourteen years.

The soil is now barren for want of A and B; let us add enough of each for two years, and then we will have in

1864, all the A again exhausted,
“ B “ “
“ C “ “
sufficient D for two years,
“ S for twelve years.

Now the soil is barren for want of three elements, A, B and C. If these were added, we would have in

1866, all the A again exhausted,
“ B “ “
“ C “ “
“ D “ “
sufficient S for ten years.

Fertility can now only be restored by the addition of four elements, A, B, C and D.

Now, a farmer commencing to work such a soil in 1856, might have supposed that it was inexhaustible, but in 1860, it becomes barren.

The addition of the manure A to it, then, restored its fertility, he now might get the idea that A would do to restore the fertility of *all worn out land*; but after two years more, A ceases to be of any perceptible use; he might then conclude that A had *poisoned the land*, but on the addition of B, he restores fertility. He would, doubtless, now recommend B to all his neighbors; but soon B becomes inoperative, and must be set down as a poison. We need not here dwell upon the fallacy of such conclusions, yet they are entertained by farmers all over the country.

I have avoided the use of the names of the elements of fertility to soils, in order to meet the tastes of those who do not like to be troubled with scientific terms. On some future occasion we may discuss the character of soils in relation to these substances, and to manures, the value of which must be dependent upon how much of them it contains.

From the Southern Homestead.

IMPROVING WORN-OUT LANDS.

MESSRS. EDITORS:—I wish to submit to my brother planter through your most excellent journal, a simple, easy, cheap and profitable plan for improving worn lands. I commenced this experiment on a field, say 40 acres, which had been, from the best information I can get, in constant cultivation for about 35 years.

It is scarcely necessary to say to those who are acquainted with the nature of the soil of West Tennessee, that I found more gullies than soil. But to the experiment. I took my leveling instrument, which enabled me to run my rows on a perfect level. I placed the rows six feet apart, threw up the beds as high as I could, leaving a deep water furrow between them, using two-horse plows, opened the beds with a shovel plow, dropped the corn and covered with a block, cultivated the corn in my usual way until the last planting, when I threw up the dirt around the corn as high as I could, leaving the same deep furrow, I thinned the corn to one stalk, thirty inches apart in the drill, and as soon as the corn was large enough to bear the dirt from the turning plow. I placed around each stalk about a quart of cotton seed, (which can, by experienced

hands, be done very rapidly,) and followed with turning plows which covered the seed and caused them to decay rapidly.

Realized a handsome field of corn, which I gathered as early as I could with safety, cut the stalks and placed them in the furrow, reversed the beds, covering the stalks, and leaving the deep water furrow—then sowed, broadcast, May or Spring wheat, dragged a heavy brush over it—the result was a good stand of wheat. When it was fully ripe, I cut it with one of Manny's Reapers, which did its work well, removed the wheat, run a subsoil plow in the water furrow deep, then threw two furrows with a turning plow, opened a list and drilled with stock peas. Left them and returned to finish the cultivation of corn and cotton crops. That done, I returned to look after my peas—mind you, I planted the last of June—I found a good stand, rather grassy, but then you know, I had, as we call it, laid by my crop, with nothing to do but plant and hoe my peas, and in doing so I necessarily covered all the wheat that had been knocked out. The vines soon covered the entire surface of the ground, and the wheat came up also—through the vines, and after the frost had bit down the vines, I found I had a pretty fair stand of wheat. I gathered as many of the peas as I would need for planting, then turned my pork hogs on, and kept them there until they were fat, and throughout the Winter the field amply supplied our milch cows with peas and green wheat, and I do not think our milk and butter could have been better.

The following Spring I run a subsoil plow deep in the water furrow, then threw the beds back, planted and cultivated as before in corn, no change, except a much larger yield of corn, sowed in wheat as before, from which I gathered 20 bushels to the acre, and sold in our Memphis market for \$1.30 per bushel. And as to the amount of peas raised each year, I have no idea, only gathering for seed. So you see I have made two crops of corn, two of wheat, and two of peas, in four years, and am now intending the same land for cotton, and my neighbors who have examined it, think I will make a crop, say 1200 pounds per acre, provided the season turns out to be an average one.

You must bear in mind that I have not only prevented the land from washing, but kept the water from running off, causing it to be absorbed where it fell.

SHELBY COUNTY.

From the Maine Farmer.

LUCK IN PIGS.

MR. EDITOR:—We often hear it remarked, even by farmers, "I never have any luck in raising pigs. I have tried a great many times, but sometimes my sow would die—a total loss of ship and cargo; sometimes she would eat her pigs as soon as dropped; sometimes, notwithstanding all the pains I could take, she would prove barren; and sometimes the pigs would do well a little while, and then begin to die off, one at a time. I never had any luck, and have given up trying. I had rather buy my pigs: it is the cheapest for me. My neighbor, Mr. A—B—, raises a nice litter every year. He is *dreadful* lucky in pigs. I never had any luck, and will never try again. It's no use."

Well, I suppose that we may as well give in that it is all in luck; but it is mighty profitable luck to the lucky fellow who can have the luck to raise from eight to twelve pigs from a young sow, each spring, and sell them for from two-and-a-half to three dollars each, at four weeks old, and make four hundred pounds of pork from the sow in the fall.—His pork comes cheap, especially if he keeps his sow on the manure heap. Lucky fellow, he. He must have been born under a lucky constellation. Or, possibly, he may be naturally hoggish himself, and have a sympathy for the swinish multitude.

Perhaps a few ideas from one of the lucky kind will be acceptable to some of your readers. We shall divide this important subject, and treat it under three distinct heads:

1. Selection of the breeder.
2. Her education.
3. Keeping.

First.—In selecting the pig to raise for a breeder, count the teats. One with twelve fully developed teats, will infallibly be prolific and a good nurse—good for milk and careful of her young.—Fourteen teats should be preferred; but never try to raise pigs from a sow with less than ten good teats. I risk my swinish character on the correctness of this rule.

Secondly.—We now come to one of the most important points in the rearing of all animals, especially the hog, viz: education. I do not mean that it is absolutely necessary that your swinish breeder should be taught to read—though I am not prepared to say she is not capable of learning even that; but I do mean to say that she should be so petted as to become fond of the person who has the care of her, and thus lose the natural ferocity of her kind, and not be disturbed by his presence when she brings forth her young.

Thirdly.—It now remains to offer a few observations on keeping. The provident will make the animal earn half her living in manufacturing manure. At all events, she should have sufficient space and exercise to insure good health and the use of her limbs. If she can occasionally have an out-door run, and a chance to root the ground, it will be beneficial. Give a sufficiency of food to keep in good flesh and growing, with a sufficiency but not an excess of salt, and an abundance of drink.—Keep warm in the winter and cool in the summer. A pailful of cold water, occasionally dashed on to the animal on a hot day, is very reviving and conducive to good health. The hog goes with young sixteen weeks. They seldom vary twenty-four hours from that time. The feed should be gradually increased as much as eight weeks before they bring forth. For two days after, she should have no food except a little thin warm gruel, not to exceed half a pint a day of meal. She should have all the warm water she will take, which will sometimes be two pailful in a day. This is very essential, as it helps the flow of milk and prevents fever. You may now gradually increase the feed till the pigs are two weeks old, when she should be full fed. If you have no better feed, good Indian meal, mixed with milk, will answer very well, if you give enough, and feed regularly. The pigs should be taught to eat with their mother as young as two weeks, which may be done

by having a broad shallow trough, and gently putting them into it when the mother is eating.

By pursuing the foregoing course, I have not failed once for the last thirty years, when I have tried, in raising a healthy litter of pigs. Some years of the thirty I have not kept a sow, but have often raised two or three litters in a year. I am considered one of the lucky kind. By trying this plan, and avoiding breeding in-and-in, some of the unlucky ones may possibly change their luck.

J. H. WILLARD.

BREEDING THE HORSE.

"The mare from which the farmer intends to breed must be free from disease of any kind; carcass roomy, barrel wide, large, and round-formed, with the ribs curving from the back, the short rib 'well home,' or leaving a small space between it and the back-bone; thighs deep and muscular; bone of the legs flat and thin—clean of rank hair—must have no appearance of swelling or any kind of thickness; feet clean, firm and sound; pastern short, but not thick and greasy; the arm in front wide and brawny; chest deep; shoulders oblique, and sloping backwards at the withers and shortening the back; top of the shoulders narrow; neck rising in an arched form from the withers, and drooping a little to the set-on of the head; crest strong and firm, and thickening downwards; ears long and fine, and quick in motion; eye prominent, bold, quick and lively; face broad between the eyes, and tapering to the muzzle; cheek-bone not very broad, which shows coarseness; muzzle small; lips short and thin; nostrils expanded, but neat; forelegs standing well forward, and not under the belly of the animal; bone clean, and short in hair; feet standing concave, and not flat; knee-joints flat and broad; color of the animal black or black-brown, with white on the hind feet, but no more. A variety of colors shows much cross descent. Horses that are white, or even having a white hair mixed in the coat, or gray horses, are reckoned to be delicate in constitution, and experience seems to confirm the observation.

"The most objectionable points that the farmer has to guard against, are heaviness of form and dullness in action, and round, heavy, hairy legs.—These latter indicate disease, and never fail to constitute a dull, lumbering animal, with a sluggish motion; one animal is found of finer form than another, produced by accident; and these varieties afford the instruments with which the further improvement is effected. No organ in the animal body shows the results of a superior organization more quickly and more durably than the eye; in every case of refined systems it is prominent, pert, and lively, and forms a point of great importance in the selection of animals. When the body is in a state of inaction, the visual organ should appear placid and easy; but when any symptoms of exertion are required, the eye must ever give the first signal, and communicate to the other parts the intelligence that the time of action has arrived; and these parts must ever be ready and willing to obey the summons, by being closely knit and joined in combination, compact, and ready for action, and not loose and disjointed, and far between.

"The qualities of the male require a similar examination: for though the best animals are usually kept for the purpose of propagation, yet a discrimination is essentially necessary. The animal must be clean-legged, with a flat, thin bone; barrel rounded, and carcass rather light, lofty, oblique shoulders, tapering withers, arched neck, and a small head; eye impetuous, but at the same time placid; ears fine and quick in motion; jaw-bone narrow, and the muzzle tapering; color black or black-brown; the hind-legs white a little above the fetlock, with a white dot on the forehead, and a white stripe down the face, are no objection; but any further mixture of colors must be rejected. It is a sign of hardihood when the legs are darker in color than the body. The gray colors of the horse is fashionable; but unless the color is very dark it becomes white in age, and experience has shown that colors having even a degree of white in the composition, denote feebleness, and a slight delicacy in the constitution of the animal. The black-brown or dark-bay seems to be the hardiest of all colors; and an animal of that sort, when well bred, and of uniform color throughout, shows a production of skill and judgment."

TOP-DRESSING GRASS LANDS.—"W. H." asks us when is the proper time for top-dressing grass lands. We would answer, in early spring, before the spring rains, if the amendment required is lime, potash, soda, phosphate, or any other missing mineral constituent. Immediately after mowing, phosphates may be applied for the increase of the aftermath; and any of the usual top-dressing may be applied late in the fall before freezing. When sulphate of lime is absent from the soil, and this is to be repaired by the top-dressing of plaster of paris, it should always be done in early spring; and when chlorine and soda are absent, requiring a top-dressing of common salt, it should always be applied late in the fall, so that it may be disseminated regularly through the soil before the young roots commence to start; for while top-dressing with common salt may check the growth of a crop of grass, a fall top-dressing will always prove serviceable.—*Southern Home*.

FEEDING COTTON SEED.—Dr. Philips, in his "corner" of the *Southern Rural Gentleman*, makes the following observation upon feeding cotton seed to stock:

"Having used cotton seed green and rotted all year, especially for hogs, and being satisfied if proper care is taken, (and that proper care is, never to give more than will be eaten at each feed, and when using green seed let it be when there is green food,) there is no danger to hogs or cattle, and we think cattle and sheep can be fed all the winter, however severe, upon a small quantity of meal and seed, with oat straw, shucks or top fodder. We say give cattle about two quarts a day, (some seed weighs 25 lbs,) say four pounds of green cotton seed, about equal to half of rotted seed, with two quarts of meal and shucks, and they will take on fat, in our opinion, far better than one-half bushel of cotton seed, the excess contains too much oil. Grown hogs will do well upon cotton seed in a woods pasture or field—pigs require care and slops."

ASHES OF PLANTS.

Extracts from the Lectures of Prof. Johnson, in Yale College.

In the course of his lecture, he uttered some doctrines which sadly conflict with the received notions which are to be found floating through our agricultural papers. For instance: he said that, chemically, magnesia is *not* injurious to crops when added in excess to the field. The noxious effect of strong magnesian lime, if any, was due simply to a mechanical action in the sod; this particular lime acting in some wise as a cement when moistened.—Again: he said, that the stiffness of straw is most decidedly *not* owing to an abundance of silica on the outside, but to “the denseness of cellular tissue in the stalk.” This he considered proved in the fact that we get from the leaves of the oat and other plants a greater proportion of silica than from the stalk, and yet all leaves are pliant and soft. And the addition of wood ashes, caustic lime, and other alkalies, with the view to making soluble silicates for the use of the plants, is a piece of useless folly, for “all water found in the soil contains silicates and silica in excess beyond the wants of plants.—The addition of alkaline silicates to the soil would be unavailing, for the silicates would be decomposed and the silica rendered insoluble.” As an example, he stated that in marshy lands, where sedge and other aquatic silicious plants grow, the addition of lime, which removes the excess of silica from the soil, favors the growth of less silicious plants. The silica then on corn-stalks, cereal crops, bamboo, ratan, and such like, he deems an excretion. The “lodging” of crops, he thinks, may be owing to a weakness of cellular tissue, which may arise from a lack of some nutritive matter or another, or from excessive transpiration of water. You know a plant sucks, sponge-fashion, its juices from the soil, through the extremities of its roots and rootlets.—In this water all sorts of mineral matter are dissolved, and with them a certain proportion of carbonic acid and ammonia; well, the plant has a very wonderful power of selecting from this soil moisture just as much mineral matter as it needs for its growth, and of rejecting all the surplus. Water, however, oozes in, by the principle of endosmose, is sucked upward from cell surface to cell surface, until it gets to the leaves, where the blowing of wind and the shining of sun upon the leaf surfaces evaporate the water through the little pores, *stomata*, which communicate with the outside air. The plant wants only just so much juice passing through it at once, and if an excess is poured through throughout a warm, damp season, you see how likely it is that its constitution should be weakened. Recent German experiments, which have come to Prof. Johnson’s observation, suggest that the beneficial effects of salt, plaster of Paris, and other mineral fertilizers, are due to their preventing this excessive transpiration, or rushing of an excess of water through the plant.

In the evening, Prof. Johnson lectured on “Atmospheric Food of Plants.” We annex a brief report of the most important of his remarks:

The larger part of the substance of plants, said he, is, as every intelligent farmer knows now-a-days, NEW SERIES, VOL. II.—18

obtained from the air; a fact fully proved in the simple experiment of burning wood in our stoves. A log of wood so large as to require two men to roll it on to the fire, burns away so that, after a time, nothing remains but a shovelful of ashes, so light that a child can carry it out. Where has the log gone to? and where have the myriad million tons of trees, plants, and animal bodies gone to, which, in past ages, grew upon the earth? They have each borrowed a little mineral matter from the ground, and a vast quantity of gases from the atmosphere, out of which all their roots, trunks, stems, leaves and branches have, with wonderful skill, been built. The animal feeding upon the vegetable—it, too, has built up its structure from these same original elements. In both plant and animal the season of life was followed by a time of death, and the organized body resolved into the gases and minerals, the use of which it had borrowed for a brief season. Prof. Johnson explained the gradual progress of knowledge of atmospheric constituents, until one day none of its ingredients remained unknown; and by means of the few well-known experiments, demonstrated the nature and properties of each. When the source of the carbon of plants was still a matter of dispute, Bonssingault, the great French chemist, proved that only from carbonic acid was it obtained, by the following experiment: He took a bell-glass, which had three necks, one at bottom and one at either side. In it he put a plant in a soil, the character of which was fully known. Into one of the side necks he passed a slow stream of carbonic acid gas, weighed, which flowed over the leaves of the plant. The gas, escaping through the opposite neck, was tested, and *found to have lost three quarters of its carbon*, while the plant itself had increased in weight equal to the abstracted portion of carbon.

Mr. Johnson stated it as the practice of some nurserymen, to place a piece of carbonate ammonia, as large as a walnut, upon the steam-pipes of the house. The ammonia thus evaporated produces in the leaves of all the plants with which it comes in contact a splendid deep green color, and greatly promotes the growth of the plants.

FOURTH DAY.

Prof. Johnson continued his subject to-day, speaking particularly on the “chemical and physical character of the soil.” There was a time when there was no soil upon the earth, and it had accumulated by the disintegration of rocks from various causes, and by the decay of vegetable matter, which began to grow as soon as the soil began to form.—Vegetable matter is not absolutely necessary in a soil in order to produce vegetation. The Lichens grow upon the bare rock. This disintegration of the rock is partly mechanical and partly chemical. It would naturally be supposed that if we knew what kind of rock lay underneath any soil, we should know the nature of the soil. Such is not the case, owing to the general intermingling of rocks which took place in what is called the *drift* period. A classification of soils is made based on the proportions of lime, clay and sand, which they contain; thus a clay, containing ten per cent. of sand, is called a heavy clay soil, one containing twenty per

cent. a clay loam, one ninety a sandy, or simply a sand. This classification is ambiguous, and leads to much confusion and perplexity. A technical nomenclature is very much needed, even if it does not require some large words.

Aluminum, a bright ringing metal, two-and-a-half times heavier than water, exists in the form of alumina, or oxide of aluminum, in large quantities in almost all soils. It is one of the chief component parts of clay, but it has no influence in the soil, except a mechanical one. As the soil progresses in its formation, there is a corresponding progress in the vegetation which it produces. The theory of nitrification is as yet uncertain. According to Liebig, nitre is formed only when vegetable matter exists in the soil. The atmospheric elements of the soil are not necessary to production, but are necessary to such rapid development as the farmer needs. Solubility of the mineral elements must exist in order that the plant may take them up. According to a new theory recently put forth, this is not so, but the rootlets of the plant take in solid matter, and the plant, by its vital force, transforms it into nourishment. This, however, is impossible. Ammonia is rapidly absorbed by the soil, and the farmer need not fear the loss of this valuable element of nature after the manure is incorporated in the soil. Nitrates, however, are not so easily taken up.

But the physics of the soil are, after all, more important than its chemistry. A few years ago chemical analysis was going to do great things for the farmer. He had only to send a piece of his poor pasture to the chemist's laboratory, to be told precisely how to make the rest of it as good as his garden. But it has been found that certain elements, without which the plant cannot perfect itself, may exist in the soil in sufficient quantities for the plant, and yet be beyond the reach of the chemist.—Chemical analysis pretends not to find a less fraction than the 1.1000; an acre of soil one foot deep will weigh 2,000,000 lbs: an ordinary wheat crop will take off only 200 lbs of mineral matter; allowing one half of this to be phosphate, and we have only one twenty thousandth part composed of that element or quantity—too small, it may be, for the chemist to find. Four hundred pounds of guano, containing say one-fifth phosphates, applied to an acre entirely destitute of phosphates, would make all the difference there is between a good crop and no crop at all; but this eighty pounds, distributed through the two millions of soil, would be too trifling a quantity for the present state of chemical analysis to detect. Besides, this is too expensive for the farmer; nor does he need it, for the general deductions of the chemist are of more value to him than any particular analysis of the soil.

The fineness of the particles in any soil is an important point. A Boston chemist found a barren New-Hampshire sand, to show the same analysis as a specimen soil from the Sciota Valley, one of the richest localities in the world, but the former was heavy and coarse, while the latter was an impalpable powder, flying away upon the slightest breath. It would take a pretty strong breeze to raise some of our New England soils. A soil, too, must have the right element ready for the crop in a state of solubility as it goes along. The elements may be

there, but if the crop cannot get hold of them they are valueless. Exposure to the atmosphere has a tendency to remedy that. The absorbing power of the soil is great, but this power depends on the minute division of its particles. The effect of the sun is different on different soils. To the vineyards on the Rhine a black slate is often applied, to ripen the fruit earlier; charcoal does the same thing. This is not because black attracts heat, but because it has the power of converting a heat of great intensity into one of less—a heat of low intensity having a greater penetrating power. The heat of the sun is what is called a white heat, like that of a red-hot ball of iron, and the slate transforms it into a heat which more resembles the heat from a ball of hot water.

From the London Review.

FORM AND ACTION OF SADDLE HORSES.

When a horseman sits on a good roadster, he need not take the trouble to pick his way when riding down a rough country lane or over broken ground, because the fore feet of a clever saddle horse, be the pace, walk, trot or canter, are always well forward, and fall flatly and evenly on the ground; and when in action, the fore-legs are sufficient but not too much bent, the action coming direct from the shoulders. But the most agreeable feature experienced in riding perfect saddle horses is, the ease and elasticity with which they move in all their paces, thereby sparing the rider any feeling of fatigue. Not only is the number of hacks and hunters very limited, but those we have—except a few in the hands of masters of hounds and members of hunts—are too apt at an early age to display some of the infirmities to which their race are now subject, in the shape of curbs, splints, and spavins, consequent upon the hurry the breeders are in to bring them into the market before they arrive at a proper working age. Thousands of capital saddle horses are annually sacrificed from this very cause. I partly attribute the downward tendency of our breed of saddle horses to the rage for speed, which is now so prominent a feature on the English turf; but when we take into consideration what long considered and careful selection on our turf has effected, when the sole object was speed, we may reasonably anticipate as important and beneficial results from equally judicious selection, when our object is to produce horses possessing that fine union of qualities so essential to good saddle horses.

There are few people who know what constitutes good shoulders in a horse—a good many asserting that they should be *fine*, meaning by this, lean at the withers. It is, however, certain that the shoulders of a young horse intended to carry weight can hardly be too thick at that place, provided they are not too thick at the points or the lower ends, while inclining their tops well back and leaving a good space between the end of the mane and the pommel of the saddle. There is a certain cross-bone which connects the lower end of the shoulder blades with the horse's fore-legs, which very materially affects his action. When this is too long it throws the fore-legs too much back, causing the horse to stand over like a cart horse; and such an animal, besides being unpleasant to ride, when at all tired, is very

likely to come down. I am here stating what is well known to good judges, but I write for the many. I would also observe that the form of shoulders I have recommended only *contribute* to good action—they alone do not *secure* it. Good hind-leg action is as important as good action in the fore-legs.—The hock joints should bend well, when in action, bringing the hind feet well forward, but without striking the fore-feet, commonly called over-reaching.

It is a common practice to pay little attention to the action of the hind legs, so long as the horse possesses what is termed "fine knee up action;" but all superior horses, of whatever breed, are eminently characterized by good hind-leg action; for be the shoulders ever so good, unless the action of the hind-legs is also good, the horse is uneasy to ride, because the action of the two sets of legs are not properly balanced, and, no matter how accomplished the rider may be, it is with difficulty he can accommodate his seat to the action of such a horse.—Such a horse is unsafe to ride, and his rider, if a judge of action, feels that he is so; but if the action of the hind and fore-legs be properly balanced, the rider feels his horse firm under him, and that he cannot very well come down. Indeed, in this case he seems to be riding *up hill*, while under opposite circumstances he seems to be riding *down hill*.—One important point which I consider has been gained by the breeding of horses for speed is, the great length between the hip-bone and the hock, as exhibited in the greyhound; and although the possession of this point is not so absolutely necessary, yet I, for one, should be inclined to give its possessor the preference for a hunter of the present day, for the horse either is, or ought to be, capable of great speed. But our hunter had not formerly this shape, and did not so much require it. There is, however, one objection against any *excessive* length between hip and hock, which is, that it frequently causes over-reach, a most disagreeable infirmity for either hunter or roadster. A horse's hips should be wide, to carry weight, and his loins highly muscular, but the lower ends of his shoulders should be light. His chest cannot be too full, but it may be too wide for speed, as well as for agreeable action, causing a rolling motion, very unpleasant to the rider.

Great depth of chest is a powerful recommendation, and the ribs before the girths cannot be too long, but the back ribs (when much speed is required) should be rather short. For very fine action, the shoulder-blades must be long, while they cannot be so without inclining well back. If a horse so formed has good hind-leg action, he will be very valuable as an active weight-carrying cob, because this form of shoulders is, I regret to say, now rarely to be found among our saddle horses, as in the majority of them that come within the pale of a moderate price, the girths are continually slipping forward, causing the rider to sit on the horse's withers rather than on his back; and this is one cause of horses falling down, as the weight of the rider pressing on the top of their shoulders seriously interferes with their free action, and when they make a slight stumble it is next to impossible to recover their feet. The best height for horses intend-

ed as hacks of the first class, is about 15 hands.—Tall horses are not so good for hacks as those of lower stature, as they do not move with so much ease and lightness, wearing their legs more, and causing more fatigue to their riders. The majority of tall horses are now-a-days tall only because they have long legs, which are very objectionable, as they never wear well, and are mostly allied with a very shallow body. These horses may do well enough when a showy appearance is the only object in view; but they are not calculated for hard work, or to ride in hilly country. I may dismiss this subject by remarking that I would not advise the purchaser to reject a horse just because he does not happen to possess all the good qualities I have here recommended, as they will remember the old adage, "That there never was a perfect horse."

From the Country Gentleman.

INFLUENCE OF THE SURFACE SOIL.

There is something remarkable in the influence on vegetable growth of the upper stratum of the soil. Take, for example, its effect on the growth of young trees. If a young peach tree, for instance, is allowed to stand in a good soil, which, from neglect, becomes hardened and crusted on the surface, it will make but a few inches growth in a single season. But if, instead of becoming crusted, the surface of the soil for only an inch or two downwards, is kept mellow, and daily stirred, the growth of the tree will be more than double, and sometimes more than quadrupled, although the roots may all be below the stirred portion. A more striking difference occurs when the surface is allowed in one instance to become coated with grass, and in the other is kept mellow. Although the roots of the grass extended downwards but a few inches, yet we have known this mere surface-coating so to retard the growth of large peach-trees, that they would not make more than three or four inches growth, while similar trees, standing in mellow cultivated ground, grew from two to three feet in a season. The roots of the trees were mostly a foot below the surface.

We do not propose here to discuss the theory of this remarkable surface influence, but merely to point out the facts, and to suggest some important practical hints.

Manure for trees and crops operates in two important ways. The first and most obvious is by its direct supplies to the small rootlets in the soil. To afford such supplies in the best manner, it should be finely pulverized, and minutely diffused through the soil at just such a depth as the roots of the trees and crops extend; neither wholly buried deep, nor left wholly near the top; but be intermixed through every part. This mode we do not propose to speak of at present. The second way is its influence on the crust of the surface, as already alluded to. On very light sandy or gravelly soils, this influence is less important, so far as the mellowing effect of manure mixed with the surface is concerned. On such soils, there is little to hold or retain its fertilizing portions, and it is soon dissipated and lost.—Straw or coarse litter, strictly as a mulch, is better here than manure merely. But on clayey soils manure becomes highly advantageous. It combines with and mellows the crust in a most efficient man-

ner. The great advantage which it possesses when thus applied to clay soils is not only in softening the hard crust to which such soils are liable, but in the ready combination which is effected between the clay and the volatile manure.

There are various ways in which surface manuring and mulching with straw benefits crops. Among others a most important one is shelter in winter.—The soil about young trees and plants, if perfectly bare and hardened by exposure, radiates heat upwards towards a clear sky, on a cold winter night, with great rapidity. A very thin coating of manure or litter is a great protection. Hence the benefit derived from the winter mulching of young trees.—In severe regions, the difference between the success and failure of dwarf pears, has sometimes resulted from this alone. Exposed crops of winter wheat have been saved from winter killing by surface manuring in autumn with thin coarse material.

The protection which such a coating affords the soil and the plants upon the surface from severe cutting winds, is frequently of great importance.—A screen of trees, or a high, tight board fence, often saves young trees or plants from destruction; and next to such a scene is a mantle covering the bare earth.

The great practical question arises, how much and how frequently is it most profitable to manure the surface? What proportion of the manure applied should be diffused through the soil, and what proportion left at the surface? At what season of the year should the work be performed? We have tried but a limited number of experiments to determine those points, and those not of much accuracy; but their general teaching was in favor of autumn or early winter manuring, if to remain upon the surface of untilled land, or to be plowed in, in the spring; and on tilled clay lands a small portion of the manure left on the surface, and only harrowed in in the spring or early summer, has had a good and sometimes excellent effect. On light soils, surface manuring during the summer has proved but little benefit, even if harrowed in the top soil. We believe the subject is one worthy of further examination.

Fram the Boston Cultivator.

MANURES.

Available means of increasing the quantity and improving the quality.

MESSRS. EDITORS:—In a former article I endeavored to show that the deterioration of the soil by constant cropping, without making adequate returns, is a natural and unavoidable effect, consequent upon such a course; and hinted at a general rule, by which the opposite results might be attained. In the present article I shall attempt to show how farmers, with some exertion, and a little outlay of expense, may greatly enhance the value, and increase the quantity of their manure, during the coming winter.

A part of the essential requisites of making manure, aside from other considerations of comfort and economy of fodder, are comfortable stables and sheds for horses, cattle and sheep—not neglecting the pigs and poultry. The quantity of fæces voided

by animals during the cold season, is affected very much by the shelter afforded it. In the open air, in winter, much of the food passes off through the lungs and skin to keep up the heat of the system, that would pass through the bowels in a warm stable. Then if you allow your sheep and cattle to run loose all winter, you will not make much manure. If you provide comfortable sheds and stables for them you will make a great deal of it. Every farmer of experience knows that this manure he must either make or buy—if he can find any one to sell it—if he would grow profitable crops, and prevent his lands from being impoverished, as our lands *must* have vegetable as well as mineral manures.

In collecting fertilizing materials for farming purposes, two leading objects should be kept in view:

1. To increase the value of such material as far as can be done with profit.
2. To prevent, as far as possible, any loss of value in the material, during the interval elapsing before it can be applied to the soil.

A general error is to undervalue the need of absorbents, and to furnish the yards and stables with but a small part of the muck, and other absorbents that might be profitably used. Without absorbents, one half, or more, of the value of stable manure is lost to the farmer, by fermentation, a portion passing off in the form of gas and is lost.

The volatile matter which escapes so rapidly, from heaps of manure, while heating or *fermentation* is going on, is called by chemical writers “carbonate of ammonia.” To arrest the escape of ammonia, ground plaster (gypsum) has been found highly useful. Liebig says, “carbonate of ammonia and sulphate of lime (common plaster) cannot be brought together at common temperatures, without mutual decomposition. The ammonia enters into combination with the sulphuric acid with the lime, forming compounds which are not volatile, and consequently, destitute of all smell.” Thus, we get two new compounds, namely, carbonate of lime and sulphate of ammonia, which is not volatile, and of course not liable to be lost in the same way as the carbonate of ammonia. This sulphate, however, is readily dissolved in water. Hence, the proper course to be pursued in the management of such manures, is entirely obvious. Plaster should be sprinkled upon the heaps as they are thrown up and *carefully sheltered from the snow and rain.*

It is well known that the urine of cattle is a richer manure than the solid excrement. Without absorbents but a small portion of the urine can be used. Undoubtedly muck is the best, taking every thing into consideration, for this purpose, but it is not to be supposed that every farmer has a “muck mine” upon his farm, nor that all of those that have have secured a stock in a condition suitable for this purpose.

The next best I consider plaster and wood ashes, with forest leaves or saw-dust. Ashes are a valuable fertilizer, and when used in this way they serve a double purpose, by acting as an absorbent, and saving the liquids that would otherwise be lost, and by rendering the humus of the leaves and other litter soluble in water. Those residing in the vicinity of forests can improve their manure, both in quali-

ty and quantity, by spending a few days in gathering leaves and storing them in their sheds and stables, where they can be used for litter and bedding, every morning after removing the manure. Our practice has been, every morning after the animals were turned out, to sprinkle the floor with ashes sufficient to absorb all the urine, when it is removed to a shed made for the purpose, where it is secure from the rains and snows that occur during the winter and spring.

The value of saw-dust as a manure, when rightly applied, is not, I think, generally understood. Applied alone, in an undecomposed state, it may not be beneficial; but mixed with other manures, it is undoubtedly of great value. It absorbs the gasses and vapors given off by manure, during the process of fermentation, and when used for bedding in stables it absorbs a large amount of urine with its ammoniacal gasses, preventing its deteriorating the atmosphere with its unpleasant odors.

A large amount of fertilizing matter, equal in value to guano, might be made every year, if each farmer would sink a vat of suitable size, in a convenient place, well cemented, so as to hold the liquids that might be emptied into it, and make it a depository of all the excrements of the family, as well as the refuse pickle, decayed vegetable matter, and all other substances, whether solid or liquid, that are made about the premises. With these materials should be mixed turf, muck, leaves, weeds, dried clay, &c., to absorb and retain the nitrogen and other ingredients that are contributable to the growth of plants.

Now let every farmer, if he has not begun already, begin the work of reform—now commence saving everything about your premises that can be made available in enriching the soil. Enough is wasted every year to double the crops on an acre of land annually, although you may be the poorest farmer in the State. Save everything in the way we have directed, and you will soon reap the benefits.

FRYE, JR.

From the Southern Field and Fireside.

CULTIVATION OF COTTON.

MR. EDITOR:—As cotton is king, and many of the readers of the *Field and Fireside* are more or less engaged in the cultivation of cotton, I propose to make a few suggestions upon that branch of agriculture, which may interest inexperienced cotton planters.

The land should be broken fine and deep in the preparation; subsoil, if a fine clay subsoil; throw up high beds for the purpose of drying the land in early spring, which not only neutralizes the acid, but creates a warmth in the soil, so necessary to start the young plant. If planting upon high dry land, the beds should be plowed down at the time of planting, and, in the cultivation, the land should be kept as level between the rows as possible, in order to keep up a free circulation of moisture during a dry season, to prevent the plant from shedding its forms. If planted upon low flat lands, inclined to be wet, it should be planted upon beds as high as possible, and in the cultivation the middle or water furrow should be kept open to drain off the surplus

water, so that the beds may have warmth and dryness, so essential to the cotton plant.

In a high latitude for cotton, it should be planted on beds as high as potato ridges, and kept so in the cultivation, by keeping the water furrow well open, which not only frees it from all obnoxious acids, but increases the warmth of the land at least one degree, causing it to take an earlier start in spring. The land should be plowed as shallow as possible in the cultivation, after the plant commences fruiting, with light harrows or sweeps, with the wings set flat to the ground, seiving the dirt over the wings, instead of throwing it like a shovel plow or solid sweep, as deep culture, at this stage of the plant, severs the small roots or feeders, causing it to shed its first fruit, which ought to be secured. In all light, loose and sandy soils, cotton should be cultivated with very light harrows or sweeps, set very flat, stirring the land as shallow as possible, but frequently, as such lands are already too porous to produce a heavy crop of fruit.

The land should be stirred as soon as possible after every heavy shower, to prevent its forming a crust, opening the surface soil in order for a free admittance of all the gases to feed the plants and enrich the soil.

These are general rules, but it will be necessary for the planter to vary these rules, and use some discretion; as, for instance, in case of a long, wet spell upon very stiff clay soil, running the soil together, it would be necessary to give it a moderately deep plowing, although it would break many of the small roots of the cotton plant. To make cotton mature well before frost, it should be left very thick in the drill, especially in a short climate for cotton or bottom lands, as many plants together have a tendency to reduce the sap in the wood, causing an earlier maturity. By deepening and enriching the soil and surface culture, I have produced a stalk of cotton this year with 523 bolls, only four feet high. It is true, that it was a very highly improved variety; yet the ordinary mode of culture would not have produced so much fruit.

Every planter should read and study agricultural papers; it makes them think and act, and makes farming interesting.

I regret to see so many farmers opposed to book farming. It is agricultural science that enables the cotton planter to raise cotton successfully, where it was once thought it would not mature, and to make the stiffest clay soft and friable.

Yours, truly,

DAVID DICKSON.

From the American Stock Journal.

RAISING COLTS.

The proper manner of breeding and raising our horses, is fast becoming a subject of national inquiry and importance. Its successful accomplishment is attended with considerable trouble and expense; but when properly attended to, and conducted on scientific principles, it becomes a source of pleasure and profit. Those who may be led by inclination, or compelled by necessity, to resort to this occupation as a means of obtaining a livelihood, or acquiring a fortune, will alike find it a pleasing and profitable result. The present high

prices which good horses command, and the annually increasing demand for them, is turning the attention of thousands of our citizens to this subject. How then to re-produce and properly develop this most noble animal, is a question of vital importance to our country.

I am well aware that so much has already been written upon this topic, that but little that is new or original can be offered; but still there are some things which cannot be too often repeated, or too indelibly imprinted upon our minds—and among these are the *true* "principles of breeding." Having been engaged in the business of raising colts for a few years past, I propose, in the present series of articles, to give substantially the result of my observations and experience, for the consideration of practical men, and not attempt to frame a perfect theory, nor to lay down arbitrary rules for the regulation and observance of others.

The first question to be considered is this—what *kind* of an animal shall I breed? I answer this question generally by advising the breeding of that kind *best suited to your own market*, wherever that may be. If your locality is where the demand is greatest for horses of slow and heavy draught, breed the kind best adapted for that service; if, on the contrary, the demand is greater for horses of quick and light work, then breed that class, and so on to the end of the chapter. If all breeders were to insist on producing the same kind of animals, the market would soon be overstocked, and the business ruined. But, in this wide-spread country, *all* kinds of horses are needed, and in demand, and therefore I would say all kinds should be bred.—Let each breeder determine for himself, what class of horses is best adapted to his own particular locality and home market; and then set himself persistently at work to produce that class, and his reward will be swift and sure.

Having settled this question, we are now prepared to consider briefly the general elementary principles of breeding. The axiom that "like begets like," may be safely set down as the grand fundamental principle of breeding. The breeder should adopt it as the golden rule of his faith and practice. This proposition, however, to be justly appreciated, must be properly understood. I have frequently been asked the question—"what do you mean by saying that like will beget like?" The answer to this question is simple and short—offspring generally inherit the qualities of their parents. Hence, if the sire and dam be *alike* in any particular form of body, or trait of character, there is a strong probability that the foal will resemble them in this particular. And where this characteristic has existed among the ancestors for a number of generations, its future transmission amounts to an absolute certainty. But where the sire and dam are *unlike*, it would be folly to expect with any degree of certainty, the progeny to resemble either parent. In this case the likelihood will be that it will be *unlike* either parent, but partake of the qualities of both. Here, then, the advantage of understanding and rightly applying this law becomes evident. It not only shows us how to perpetuate the good qualities of particular animals, but it also

points out the proper method of still farther improving them.

The second great principle of breeding is this—*breed up*, not down. Always breed up to the higher, purer, nobler race, and never down to the cold-blooded dunghill. If there is anything that I have learned by experience, it is the truth of this principle. The difference in the progeny of the same dam, where bred to stallions of different degrees of blood, has been so marked, that I am fully satisfied that a mare should never be bred *below* her condition.—The great superiority of the colts raised from the sire of nobler blood proves this conclusively. I am well aware that many breeders will not agree to this—they tell us "blood is nothing, it is *form* that constitutes superiority." While I am free to admit that form is of primary importance, it remains equally true that blood should never be neglected. He who intends breeding his stock for the great markets of our country should remember this; and particularly, he who intends to breed a stock of horses for the purpose of again breeding from them, should know the *blood of his stock* is of the highest importance; and he who breeds otherwise will be sure, sooner or later, to repent of his error.

A PENNSYLVANIA FARMER.

From the Valley Farmer.

PREMIUM CORN CROP IN INDIANA FOR 1859— IMPORTANCE OF SUBSOIL PLOWING.

We had just finished writing an article on the importance of "Trench and Subsoil Plowing," which appears in the present number of the *Valley Farmer*, when we saw in an Ohio paper an account of the extraordinary crop of corn, which took the first premium offered by the State Agricultural Society of Indiana. The mode of preparing the land, and the subsequent cultivation is so nearly that which we have repeatedly recommended as the best of all others, and the result is so encouraging, that we give the substance of the article as furnished by a correspondent.

The corn was grown in Switzerland county, Indiana, near Vevay, by J. W. Wright. As a further proof of the correctness of this method of preparation and culture, we will state that Mr. Wright took the first premium also for 1858. The crop in 1859, for which the present premium was given, five acres of which averaged 184 bushels and 32 lbs per acre, and ten acres averaged 174 bushels per acre; the best acre out of the five produced the astonishing quantity of 214 bushels. This farm is situated on the Ohio river; part of it is bottom land and overflows. Some of this land has been in corn sixty years in succession. The past year he raised 34 bushels of wheat per acre from some of the land, it being the first crop of wheat ever taken from it.—But the method of cultivating the corn is the point to which we wish to call particular attention. It is as follows:

He subsoil plows his land once in three years, with the best plows made for that purpose, drawn by a famous team of oxen that shows that they are fed on premium corn, and by an owner who knows how to raise premium crops and keep good cattle. The oxen weigh 3,600 lbs, and follow directly after

the common plow, breaking up from *fifteen to eighteen* inches deep.

After the corn is gathered in the autumn he does not allow his fields to be trampled by any kind of stock. At convenient times he rolls the stalks down flat, lengthwise the rows, and plows them under in February, if the weather is favorable. At corn planting time he harrows his ground without any further plowing, plants his corn with the Cherokee Corn Planter, the rows being three feet three inches apart, with three grains in a hill.

He cultivates his corn one way with a double shovel plow, the shovels being about four inches wide, plowing from *seven to eight inches deep* the first time, and as near the corn as possible. The second plowing is about *four inches deep*, and the third and last, two inches, *leaving the ground as level as possible*, and taking special care *not to cover the brace roots*, which are very essential to the healthy growth of the crop. These brace roots throw out an infinite number of fibrous roots—the feeding apparatus of the corn plant. A few years ago, Mr. Wright purchased a farm near him, which had been so badly managed, that the occupants could not raise more than fifteen or twenty bushels of corn per acre. The first year after the purchase he subsoil plowed it and planted it in corn. The result was 84 bushels per acre; and in 1858, after the second subsoiling, four years after it came into his possession, he raised the premium crop of over 130 bushels per acre.

Here are accounts of repeated crops from the same land, and all by the same mode of cultivation, differing materially from the course followed by the great majority of farmers, and these crops *six or eight* times greater than the same land yielded under the ordinary mode of tillage practised throughout the country, and with the exception of the labor of running the subsoil plow, the cost of cultivation in no way exceeds that of the ordinary method.

We have practised both methods of cultivating this crop, and as the result of experience we have always recommended *deep and thorough plowing, planting with the drill, and dressing with the cultivator*, or what is equivalent in this case, the double shovel plow and *level culture*. Here we have the whole system demonstrated, and the returns of the two methods of culture compared. If this does not afford the arguments and the proof sufficient to induce the most skeptical to give it a fair trial, it is in vain to attempt to bring about improvement in this or in any other branch of farming. We hope we shall hear further from Mr. Wright.

From the Valley Farmer.

BLOODY MURRAIN.

A subscriber in Adair Co., Mo., having lost several cattle by this disease, asks for a remedy or preventive. The cause of this disease is still involved in mystery. We have met with no authority that satisfactorily defines it. It seems to have its origin in the liver, attended with severe inflammation, and generally terminates in death. Numerous remedies have been proposed, many of which are absurd.—It is difficult to prescribe for a disease without first determining its cause and character.

It has more generally been attributed to leeches,

that have been swallowed by the animal while drinking. In most cases when the livers of cattle that have died with this disease have been carefully examined, animals having some resemblance to the common leech have been found alive in the liver, and these have led to the common impression that they have been swallowed, and after arriving at full size, in their action have led to a rupture of the blood vessels, causing inflammation and speedy death. Cases were examined a few years since by John H. Klippart, Esq., Secretary of the Ohio State Board of Agriculture, an intelligent and close observer of nature, who came to the decided opinion that the animals found in the liver were not of the genus *Hiridis*, or common leech, but differed materially from it in its character and organization—illustrations of both of which he gave. From this examination, so clearly set forth, it is probable that the animals found in the liver are parasites peculiar to that organ, the origin of which is no more mysterious than that of numerous other parasites that are common in different parts of domestic as well as wild animals.

As a remedy, blood-letting is generally resorted to, and various drugs and purgatives administered; but we are not acquainted with a single instance, where the disease was unmistakably bloody murrain, that they proved of any avail. The disease prevails most in low, wet, miasmatic situations, and we can, therefore, more safely recommend a preventive than cure. Cattle kept in good condition, upon high, dry, wholesome pastures, with salt and dry wood ashes given them once a week, or kept in covered boxes where they can have access to it at pleasure, we think, will not be subject to the disease.

Animals attacked should be removed from others of the herd at once, and if they have frequented low, wet pastures, where miasma prevails, they should be changed to more healthy situations.

GREEN RYE FOR BREEDING MARES.—A subscriber has sown a field of rye for his breeding mares, but has since been told that if they are allowed to feed upon it they will not “take,” and asks us whether this is a fact.

It is said, that green rye, and particularly green clover, in their most succulent stages, produce such an effect upon the bowels and the animal system generally, as to render breeding sometimes uncertain. If we had mares from which we wished to breed valuable colts, we should prefer to give them shorter and more substantial pasture, with hay and other solid food, and reserve the rye or clover in the earlier part of the season for other stock. We know nothing, however, from personal experience of the fact that green pasturage is thus injurious; yet, from the well-known effects of such food upon the animal secretions, we have no doubt they are liable to the accident referred to. We shall be pleased to publish any facts touching the subject, from the experience of any of our readers.—*Valley Farmer.*

We should do well to take counsel from the wise and warning from the foolish.

Every day of the week is observed as a Sabbath by some of the nations of the globe.

THE GULF STREAM AS A FERTILIZING AGENT.—If we follow the Gulf Stream across the ocean, we perceive how fully it fulfils the purpose for which it was designed. Sir Walter Scott tells that the pools in the Orkneys are never frozen, the effect of the grand hot water warming apparatus of a far distant shore being sensibly felt even in these islands, which are situated in latitude nearly ten degrees further north than the ice-bound coast of Labrador. We all know that in Great Britain there is an extraordinary difference between the eastern and western coasts, so great indeed as to induce completely different systems of agriculture. The Emerald Isle owes her splendid grazing land to the soft west breeze, born of the Gulf Stream, which strikes full upon her shores; the western shores of England are robed in bright green pastures nourished with the warmth and moisture issuing from the same tropical source. The dairy produce of Great Britain has its root and issue in the steadfast hot water river in the ocean, the limits of which modern science has so accurately mapped; nay, the florid, plump look of our people, and the large size of our domestic animals, are but the effects of that moist and genial atmosphere which finds its birth-place in the beneficent Gulf Stream.—*London "Once a Week."*

USE OF LAND PLASTER.—The *Rural Register*, in an article upon the use and properties of gypsum or land plaster, makes the following practical remarks upon its application to land:

"There are, however, certain soils, as there are plants, upon which plaster produces no sensible effect. It succeeds best on tolerable fertile sands, or gravelly loams, or upon any soils that are not too stiff or too moist. When a soil already possesses a sufficiency of sulphate of lime, the additional application of plaster is not of very material service.—The best season for applying plaster is in the early Spring, when the young clover is about three inches high, and during warm moist weather, when the fine dust will adhere to the leaves for some time.—In a soil wholly deficient in sulphate of lime, plaster has produced superior effects, by broadcasting the field at the time of sowing the clover seed, and repeating the application the following Spring. A field once plastered with from 250 to 400 lbs per acre, will not need a similar top-dressing for four years.

HOW TO PREPARE BONES FOR MANURE.—An esteemed correspondent, Mr. Charles F. Raymond, of Norwalk, Conn., says the *Field and Fireside*, sends the following recipe for preparing bones, as he uses them:

Collect from butchers and elsewhere, all the bones that can be had, (Mr. R. pays boys 25 cents a bushel for gathering them), and break them up with a sledge-hammer till the pieces are not larger than hazel-nuts. Put the broken bones into tubs, and to every 12 pounds add one of oil of vitriol. By occasionally stirring and turning the mass from the bottom, chemical action ensues, heat is generated, the bones become soft, and their earthy part is either dissolved or converted into a fine powder. Mixed with a little dry loam, or pulverized charcoal, and it is ready for use.

TIME OF CUTTING TIMBER.—I see a communication in my December number, from the *Scientific American*, for the best time of felling timber for fencing. He says, timber cut in late autumn, and split or sawed before spring, will not powder post. Now sir, I think, he, like many others, is very ignorant upon that subject. I have had much experience in the cutting of timber of all kinds, growing in the Northern and Middle States. The writer says, fence posts, and rails particularly, no matter what kind the timber may be. Now, sir, I can assure all men, that hickory felled three days before the change of the moon, the worms will cut it almost up. Cut a hickory in the spring, three days before the change of the moon, and stand it up against a white pine, and worms will eat up the hickory and kill the pine before one year; and a hickory cut in the third and fourth day of the new moon, no worm will ever attack it. Those who disbelieve it, try it. **SUBSCRIBER.**

American Farmer.]

THE WAY TO MANAGE HORSES.—Never attempt to clean or otherwise disturb your horse while eating his meal, unless you want him to bite and kick. But when you clean, take him out of the stall, and make a business of it. Tie your horse in the centre of the stall, unless you want your horse to do as most horses do, drive more on one rein than on the other. Horses that are liable to cast themselves in their stalls, should be tied with a neck halter, giving them much more freedom of the head than the nose halter. Gentleness, firmness and moderation will subdue the most obdurate.—*New England Farmer.*

GOOD ADVICE.—If the poor-house has any terror for you, never buy what you don't need. Before you pay three cents for a jews-harp, see if you can't make just as pleasant a noise by whistling—for such nature furnishes the machinery. And before you pay seven dollars for a figured vest, young man, find out whether your lady-love would not be just as glad to see you in a plain one that cost half the money. If she wouldn't, let her crack her own walnuts and buy her own clothes.

THE POTATO.—Sir Walter Raleigh, who was the first discoverer of the value of the potato as food for man, one day ordered a lot of dry weeds to be collected and burnt. Among these was a lot of dried potatoes. After the bonfire, these potatoes were picked up thoroughly roasted. Sir Walter tasted and pronounced them delicious. By this accident was discovered a species of food which has saved millions of the human race from starvation.

A FAILURE.—A letter recently received from Tunis, by a gentleman of Philadelphia, says, that the attempt to raise cotton in that country, has again resulted in a failure, both in the hands of private planters and those of the English Arab company engaged in the experiment.

TRUE, Conscious honor is, to feel no sin; all armed without, when innocent within; be this thy wall of brass.

The Farmer and Planter.

COLUMBIA, S. C., MAY, 1860.

HINTS FOR THE MONTH.

April showers have been rare visitors during that fickle month, while we have had cool mornings, high winds, cloud-ups and clear-offs, with cold norwesters in pretty rapid succession. To-day, the 18th April, rain 4-10 inch, wind N. E., clouds boiling up, cold, and every indication of a wet spell at last.

Oats look badly—cannot be relied on for a half crop.

Wheat has suffered for rain—the early varieties have run up “spindling,” and are heading out—a bad indication for a good crop.

Barley and *Rye* look but little better. The general scarcity of *corn*, added to this state of things, points out the necessity of a substitute. Can anything better be found than the *sorghum*? Try it—plant freely on good land and bad land, cultivate it, and it will surely pay this year.

Millet, *corn*, sown or drilled on rich lots, and *clover*, all will be found valuable. The season has been death on *clover* and the grasses generally, except upon very moist localities.

Corn.—It is very important to give this invaluable cereal a good “working” at the beginning. The soil should be put in that condition to encourage the growth and extension of the myriads of young roots which strike out as feeders at this season. If you can secure this condition for the young plant, the after-culture will be found of very little importance, for if you keep down the grass and have good seasons, you will make corn, if the land can make it, by very little work, after a *good beginning*. We have never met the man yet who did not think he knew best how to “tend his own crop,” and as all sorts of farmers make more or less good crops, we have come to believe that a good deal depends upon perseverance and the land. A system of culture may suit A’s farm, which would be wholly impracticable on B’s, and so on, but we have never heard any man object to deep plowing, in the preparation of his land, be his culture afterward what it may. There is one thing, however, which we think has been very little studied—the effect of light and shade.—Now and then we find planters who recommend 4x3 or 5x3, but the majority follow the old 4x4 system.

Cotton.—It is generally admitted that the sooner you can bring your cotton to a “stand” the better, and the more stalks you have upon an acre, the more lower limbs and early bolls, as a general thing, may

be expected. Experience has settled the question, that the shallower the cultivation of cotton the better—the nearer you can come to hoeing with a plow the better. The scraper and sweep should be mainly relied on. It is worth noting that Mr. CROSSWELL, Mrs. DEVEAUX’s manager, in cultivating his Premium crops, has always plowed “every other row,” thus cutting or disturbing only the roots on one side of the plant. Every close observer must have been at times struck by the shedding of forms, which often follows a plowing in dry, warm weather. The first working of cotton has very much to do with its future well-growing, so you need not think “any way will do now—when I come round again” is sometimes a long ways off.

Potatoes should be planted as soon as possible, but be certain to set out slips every season until July—no one ever has too many potatoes. Plow deep, and throw up mellow beds for the reception of the slip.

Peas should always, if possible, be planted in May—the sooner the better. The pea is not sufficiently appreciated by us. It should be made a special part of the crop, planted to itself and for itself. There are a great many very valuable varieties now in cultivation, adapted to short seasons and all manner of soils—all are good.

Stock.—Keep an eye on your cattle, have them regularly salted, and add a little soot, ashes and sulphur, now and then.

Sheep should be sheared about 1st May. Tar their noses well, and give a little internally while you are about it, and turn them into a woods pasture. The dews and sun are very severe upon them at this period. Salt and sulphur given to them regularly will be found beneficial. Keep a look out for the dogs, and your powder dry; don’t believe in bells keeping off dogs—they are not half as good as gun-powder.

Hogs.—Count the fat ones, and keep them near home. Your clover lots will do wonders for them now. Salt regularly, and keep them out of your stables, barn lots and dusty places, if you want to avoid coughs and wheezings.

THE Publisher feels under obligations to Dr. PARKER, for his timely hint on the subject of the charities due that class of unfortunates, of which he has proved himself so humane and admirable a guardian. It is but a poor apology to say it was the result of thoughtlessness, and he may look out for our regular visits hereafter. And while we have been reminded of the large Asylum, the little one shall not be forgotten, so the Doctor’s article has produced more good fruit than one reform.

LICE IN POULTRY HOUSES.—Make a wash by boiling cedar boughs in water, and apply like white-wash to house and roost.

DEATH OF J. W. JONES.

The February number of the *Southern Cultivator* (which has but just now been received) contains a notice of the death of JAMES W. JONES, the originator and first editor and publisher of the *Southern Cultivator*, a fact of which we were ignorant, as we had always given the credit to W. S. JONES.

Mr. JONES needs no better monument than the *Southern Cultivator*. It is one of the oldest agricultural journals of the South, and has always abounded in useful practical information. No journal in the country has ever been able to secure so large a corps of contributors and correspondents—the best evidence of its popularity and its usefulness.

PREMIUM CORN CROPS.

We call the attention of our readers to a notice of the Premium Corn Crop in Indiana, for 1859, from the *Valley Farmer*.

When Dr. PARKER received the premium at the State Fair, a few years ago, for a yield of 200 bushels upon an acre, there was a general cry of impossible! humbug! and all that, and some of the absurdest of stories were put in circulation, as to how that immense yield was produced. While nobody who knew Dr. PARKER doubted his reliability, many believed that he had been imposed upon by his manager. We have no doubt but with a good stand, good seasons, plenty of manure, judiciously applied, the right kind of work, with the facilities of irrigation, which Dr. PARKER possessed, that 200 bushels could be grown upon an acre of ground, incredible as such a story may seem to those who are accustomed to look upon 20 bushels as good business.

Whether it will pay or not is a different question; but it is certainly worth knowing whether it is better policy to grow maximum crops on a small area, or to plow over a large area for an equally uncertain result.

COMMERCIAL FERTILIZERS.

We have been no little censured for our course on the subject of commercial fertilizers, and have been told that our advertising columns have paid very dearly for it. Very well—we have, from the beginning, declared this to be a paper published for the benefit of the agriculturists. If the agricultural interest of the country will not stand up to it and sustain it in the exposure of frauds and impositions, in the declaration of facts, it must go down—there is the whole story, told in a few words. Our advertising columns are open to gentlemen, and there they can spread out to their heart's content—it is legitimate—but we claim the privilege of asserting our prerogative over the reading columns, and shall aim to do what is right, as the schoolboys used to say, "without fear, favor or affection."

We would direct the attention of our readers to an article from the pen of Dr. LEE, of the *Field and Fireside*, on Rhodes' Super-phosphate. It is worth studying carefully.

We would esteem it an especial favor if gentlemen throughout the State would give us the results of their various experiments with guano, phosphates, &c., during the present year. It would be an immense saving doubtless to society.

"IMPROVING WORN-OUT LAND."

Our readers will find a suggestive article upon this subject, clipped from the *Southern Homestead*.—It is daily becoming a more serious matter to all tillers of the soil, at the South. The dullest intellect must, ere this, have become convinced that the slave States are doomed to make all they can out of the area which their Northern task-masters have assigned them. Our own politicians seem to have given it up, and resolved to take care of themselves.

Everybody cannot buy Guano. It may, or it may not, be a wise economy to do it. Our neighbors in Virginia and Maryland, who began to use it long before we did, seem to doubt it. At all events, if there be any other method of growing remunerating crops upon old fields, it is very important we should know it. The extensive adulteration of Guano, and all chemical fertilizers, makes their use, to any extent, hazardous, while the cost of transportation is no inconsiderable item.

A great deal of confusion has been created by our Agricultural Chemistry Theorists, upon this subject of restoration. So many diametrically different doctrines have been earnestly and plausibly set forth, that common-sense people have become very distrustful about everything called "book knowledge." It has retarded agricultural improvement more than ignorance. It is easier to teach than to correct erroneous teaching; and it is really no wonder that sensible men hesitate to embrace opinions to-day which may be denounced to-morrow. One Professor will tell you that nitrogen (ammonia) is the principal food of plants—ergo Guano is the best of manures. But, hold! says another—the constant application of Guano, like a leech, will suck all the blood out of your soil; nitrogenized super-phosphate of lime is the very thing for all crops, from a pear-tree to a pumpkin. Another gentleman tells you that shade is all that is necessary; another advises lime, another ashes, another plaster and green crops—while some argue, with some degree of plausibility, that more, after all, depends upon the character of the soil and its treatment than upon any manure. If your soil contains a sufficiency of lime, potash, soda, and such minerals as may be necessary to the perfecting of plants, all you have to do is to plow

deep and keep your soil in a condition to rot the atmosphere, dews and rains of the carbon and ammonia, which nature is ever ready to supply from her capacious laboratory. This seems to have been the practice of the Tennessee farmer, and his success should encourage many to follow his example.

But there is one thing to be kept in mind. You must have a *good* subsoil to begin upon—there is no chance to make something out of nothing. If your soil was naturally poor, *ab initio*, sell out and look for a better one. Although it may require a very small amount of mineral matter to answer the purposes of a crop, that little is indispensable. You must have a *little* leaven before you can leaven the whole lump.

DISEASES OF CATTLE.

A malignant epidemic has made its appearance amongst the neat cattle of the North, and is sweeping everything before it. It is called "Pleuro-Pneumonia," and seems to have been imported in the following manner:

A Mr. CHENERY, of Massachusetts, imported, in May, 1859, some Dutch cattle. They arrived in bad order, "very much bruised and emaciated." In August following, symptoms of disease became apparent; one of the cows died, and several other cattle were taken sick in rapid succession. Every effort to arrest it proved unavailing, and Mr. CHENERY lost about thirty head of cattle—one-half his herd. The disease also broke out in North Brookfield and vicinity, from some calves that went from Mr. CHENERY'S farm, in June. It has made its appearance in other places also, and, in every instance, nearly, proved fatal. Its approach is most insidious, and once fixed, it may be said to be incurable. In England, Ireland, and Holland, it has defied all manner of treatment, and swept off immense numbers of cattle.

As we are in the habit of importing cattle from Northern herds, it may be as well to keep an eye on this epidemic, and guard against the introduction of such an unmanageable enemy.

The following extract from the pen of a distinguished Veterinary Surgeon, clipped from the *Boston Cultivator*, sheds some light upon the subject worth noting:

"Pleuro-Pneumonia is defined as an inflammatory disease of the pleura and the lungs. The pleura is a thin membrane which covers the inside of the thorax, or chest, and invests the lungs. Pneumonia signifies the inflammation of lungs. Hence it will be observed that the difference between pneumonia, and pleuro-pneumonia, is, that the former relates to the lungs alone, and the latter to both the lungs and the pleura. Epizootic, pronounced as divided, ep-i-zo-ot-ic, is a term applied to diseases that are prevalent among animals, corresponding to

epidemic among men. Epizooty, a pestilential or infectious disease, a term that may be applied to murrain or other contagious diseases.—W.

W. C. Spooner, an English writer on the diseases of cattle, in alluding to the introduction of this disease into England in 1840, by the introduction of some Irish cattle, says: In nine cases out of ten, its outbreak in any district may be traced to the introduction of cattle from abroad, i. e., from some other country or district of the same country; hence its propagation can be justly assigned to carelessness or ignorance, for it is generous and charitable to presume that no one would knowingly or willingly introduce such a malady into his own herd, or suffer, knowingly, the exportation of animals thus infected.

Dr. Darwin's advice in England, more than half a century ago, was, "slaughter all the cattle within five miles of the infected district," a provision needlessly harsh and inconsiderate, for separation will quite as likely produce the desired result. After separation, slaughter and bury such as are deemed, on competent authority, (if such there be) as incurable. Great care should be taken, if the hides are taken off, that the infection be not conveyed by them to other localities. The safer way is to bury hide and carcass together, unless the former can be at once disinfected, in case it is removed.

We are of the opinion that this disease is endemic as well as epizootic. Every putrid fever is probably more or less infectious or contagious. The disease may be produced, we doubt not, by an infected atmosphere or want of ventilation. In the inhalation of a poisonous atmosphere the lungs and the pleura may become diseased, and ultimately, take on the type of the malady in question. Mr. Chenery's late importation of Dutch cows may have been a case of this kind, the disease having been developed on board the ship, in consequence of neglect, and there is some probability that this was so. At the same time, though it be admitted possible thus to develop this malady, it is undoubtedly much more frequently introduced by importation, as aforesaid. Previous to the breaking out of epizooty, a pestilential disease in Hungary, in 1712, it is recorded, "that the spring was rainy and the temperature changeable, for on the same day the morning was cold, the middle of the day very warm, becoming cold at 3 p. m., and warm at evening." Animals, it is said, "were seized one after another with the disease, from contagion or infection of the air, or, a whole herd sometimes being attacked at nearly the same time." The infection in this case was supposed to be in the atmosphere inhaled.

BUTTER is improved by working the second time after the lapse of twenty-four hours, when the salt is dissolved, and the watery particles can be entirely removed.

THE VALUE OF WHEAT STRAW AS FOOD.

As the period is approaching when the wheat crop will be harvested, and planters will be very much bothered to know what to do with their straw, we beg leave to call their attention to the following table, taken from the *Cyclopædia of Agriculture*.

It is suggestive, and if any man, after reading it,

will still persist in the belief, that feeding on wheat straw will make stock lousy and mangy, and that it has no strength in it for manure, being only fit to fill gullies and poverty knobs, we will give him up as a hopeless case.

In France, the wheat straw is prized highly as food for horses. In England, it is valued at \$10 per ton, and the celebrated "Tiptree Hall Farmer," Mr. MECHI, has demonstrated, by his success in stock-feeding, that there is no better or more economical food. Try it on your sheep, cows or mules—but first take care of it—keep it dry, stack it neatly, or house it, all the while sprinkling a little salt amongst it, when putting it away. Put up in pens, as usually done, it is worth next to nothing.

AVERAGE COMPOSITION OF WHEAT STRAW.			
100 parts of wheat straw contain—Nitrogenized substances, (muscle-producing substances) Air dry.....	1.85	Dried at 212° F.	2.03
Substances free from nitrogen, (heat and fat-producing matters) soluble in potash, air dry.....	26.34	"	35.06
Do., do., insoluble, air dry.....	31.22	"	35.07
Mineral substances, air dry.....	4.59	"	6.01
Water, air dry.....	26.00	"	
	100.00		100.00

Thus it will be seen that one hundred pounds of wheat straw contain over sixty-nine pounds of muscle, heat, and fat-producing matter, and twenty-six pounds of the remaining thirty are water.

Dr. Lyon Playfair, the chemist of the English Royal Agricultural Society, gives the following table of the relative value of wheat straw, hay, and several other kinds of food :

COMPOSITION OF THE PRINCIPAL ARTICLES USED AS FOOD.

100 lbs wheat straw contain.....	79	lbs dry organic matter or food.	18	lbs water.	17	lbs	ashes	3	lbs
100 lbs linseed cake.....	75½	lbs	"	"	16	lbs	"	7½	lbs
100 lbs peas.....	80½	lbs	"	"	14	lbs	"	8½	lbs
100 lbs beans.....	82½	lbs	"	"	16	lbs	"	9½	lbs
100 lbs ordinary hay.....	76½	lbs	"	"	15½	lbs	"	7½	lbs
100 lbs barley meal.....	82½	lbs	"	"	9	lbs	"	2½	lbs
100 lbs oat meal.....	89	lbs	"	"	14	lbs	"	2½	lbs
100 lbs bran.....	81	lbs	"	"	18	lbs	"	5	lbs
100 lbs oats.....	79	lbs	"	"	72	lbs	"	3	lbs
100 lbs potatoes.....	27	lbs	"	"	89	lbs	"	1	lbs
100 lbs red beets.....	10	lbs	"	"	89	lbs	"	1	lbs
100 lbs turnips.....	10	lbs	"	"	85	lbs	"	1	lbs
100 lbs Swedes.....	14	lbs	"	"	87	lbs	"	1	lbs
100 lbs white carrots.....	12	lbs	"	"	89	lbs	"	1	lbs
100 lbs mangel wurtzel.....	10	lbs	"	"			"		

"FACTS FOR FARMERS."

We are very much indebted to the agricultural editor of the *N. Y. Tribune*, for a few raps on the above subject, suggested by the perusal of Mr. LIEBER's article, in the March number. All such raps, coming from that quarter, while they may serve to tickle and gull the negro-philists of the *Tribune*, will do us good by showing our own readers the gusto with which our brothers over the line enjoy anything which may attach odium to us.

We don't know where Mr. LIEBER got his idea of Hay from Holland, but we take it that the readers of the *Tribune* need not be much alarmed—there will never be enough brought over the water to seriously interfere with the consumption of Yankee Hay.

But it may be a comfort to the *Tribune* to know that Mr. LIEBER is still at large, very quietly pursuing the even tenor of his way, and that the editor of

the *Farmer and Planter* stills walk in public "un-whipt of justice."

But, *sub rosa*, Mr. Agricultural Editor of the *Tribune*, don't you guess, if certain heresies, published some years ago, about Southern people and Southern institutions, in the *Charleston Mercury*, by one Solon Robinson, when acting as Agent of N. Y. Agricultural Implement Houses, Northern Agricultural newspapers, and all that, were published over his signature, in the *Tribune*, it wouldn't create a terrific buzz about the ear of the agricultural editor?

FACTS FOR FARMERS.

HAY FROM HOLLAND.—The free and independent Republic of South Carolina is undoubtedly on the high road to prosperous independence of the hated North. Hay is imported into that State from Holland. At least, it is so stated, in a remarkably able report, by Oscar M. Lieber, State Geologist of South Carolina, upon "the Agricultural Capacity of the State, and the Obstructions to its full Development," published in the March number of the *Farmer and Planter*, at Columbia, S. C.; a paper, by the by, which proves, by its excellence, and its want of patronage, that agriculture in that State is at a lower ebb than Mr. Lieber's report, melancholy as it is, would lead us to believe.

If Mr. Lieber has not already been visited with the penalty usually inflicted upon truth-tellers, in that land of Chivalry, it is probably because farmers who import hay from Holland never read anything about their own business. That he had a fear of their indignation, is evidenced by the closing sentence of the report, for he deprecatingly says:

"This chapter contains much which may well serve to depress the reflective mind. Indeed, I may not escape the blame but too frequently attaching to those who venture to point out such deficiencies."

Another writer, in the same journal, who calls himself "An Old Grumbler," who has told the South Carolina planters a great many "barefooted trooths," says:

"Raise the sheep, grow the wool, and eat the mutton. It is cheaper and better animal food for your slaves than greasy stearctic bacon. The change of diet would benefit them."

Doubtless it would; and it would not have a bad effect upon their masters—this change of diet, as well as change of policy.

Verily, these are grand truths to be published at the Capital of South Carolina. If the same words had originated in the *Tribune*, it would have been consigned to the flames by the first Quattlebum importing hay from Holland, who happened to cast his eye upon such "infernal abolition lies."

If we do not soon hear of the burning of the office of the *Farmer and Planter*, and tarring and feathering of its editor, at Columbia, S. C., we shall have some little hopes of living to see the day when that State will look no longer to Kentucky and Ohio for mules and bacon, nor to the New York market for beefsteaks and roasts, nor to Holland for her hay.

Great country—great people—great State—is that South Carolina. We don't wonder that the editor of the *Planter* says: "What conclusion would any stranger come to, as regards the agricultural resources, intelligence, or condition of South Carolina,

by reading any paper published in Columbia or Charleston? He would be forced to draw nearly all his material from the advertisements of land sales, negroes, and prices current."

For the *Farmer and Planter*.

"PEEPS OVER THE FENCE."

MR. EDITOR:—Every man has his hobby, and you have seen enough of hobby-riding to have learned with what a gusto every one enjoys his own riding. Well, sir, I have a hobby of my own, which I fancy and enjoy exceedingly at times—it is overlooking my neighbors hobbies. I have many a hearty laugh to myself at the absurd follies I see my neighbors guilty of in hobby-riding.

There is Col. A., (all the neighbors I have are Colonels or Majors,) his especial hobby is gates; he is always building gates after some new fashion; some of them are hung up on a gallows as high as Haman's; others are low enough for a yearling to jump over; some slide in and out, a sort of cross between a gate and draw-bar, and others hang by the upper end like an old fashioned "Entertainment for Man and Horse" sign board. But I plead guilty to a liking for gates, and am almost willing to endorse hobby-riding to any extent in this department. A gate is a labor-saving, a time-saving, and, I may say, a comfortable looking contrivance. With two pieces of scantling 3x4 inches, one 6 feet one 4 feet long, 6 slats 1x3 inches, 10 feet long, 2 slats to brace from the foot of the long scantling to the top of the front scantling, and 2 short slats to brace from the foot of short scantling to centre of gate, meeting the other braces, you can put together in a few hours a gate which, if made of good timber and properly hung, will last for twenty years.

The great mistake generally made is in making gates too high and too heavy. A gate 5 feet high will be found sufficient for all ordinary purposes, and the light gate, well braced and well hung, will outlast a heavy one, for its own weight will always keep it out of order.

Now, get stout post-oak posts, as much heart as possible, and cut in August; char them to a point of 4 inches above ground—set them deep in the ground, and place a heavy post-oak in the ground between the posts, so as to prevent the posts swagging. Hang the gate as securely and as simply as possible. It is very hard to keep a gate in place with iron hinges, and expensive as well as troublesome, where you have not a smith of your own.

I have seen gates good for twenty years, hung by a bar of old iron, fastened round the longer scantling to the gate post and the bottom, running in a two inch augur hole bored in the log, or in a sassafras plug driven into the ground. It is a good plan to cut a groove or rabbit in the post against which the

gate, shuts for the gate to fit in. It gives a snug look, and does not offer as good a fulcrum for a hog's nose to work on in opening.

I know you are tired of me, Mr. Editor, but I must take another look over the fence. There is Maj. B., who has a draw-bar hobby, which he enjoys exceedingly. His draw-bars are none of your make-shifts, out of old slabs or plank, or fence rails, constructed "in a hurry, just to do till I get time to fix better," and admirable fixings to teach an old mule how to "let down the bars" and poach upon green pastures, or hogs the art of testing the elasticity of various timbers, but they are genuine specimens of scientific draw-bar fence-architecture. The Major takes pains—he is as particular about having his fields square; and right in the corner of the field, or where two fields join, he is sure to put up his nice draw-bars. He takes pains too—gets good sassafras posts, hews them down, mortices them, and sets them deep; then his bars are drawn smooth by a drawing knife, out of good white oak. The Major plumes himself on his draw-bars. The other day I was passing when one of his negroes was going into the field, and curiosity tempted me to time him. He was pretty brisk, but it took him just five minutes to get through, and the colt got his leg hung in jumping over, and went off limping.

I hate a draw-bar, and have had my horses' shins and hocks too often hurt by them even to tolerate them; and isn't it strange that as sensible a man as the Major should expend twice the time and labor in making a draw-bar that it would take to make a gate? But everybody to his own notion.

Yours, in a hurry,

SNUB.

For the Farmer and Planter.

"LOOK OUT FOR THE ENGINE WHEN THE WHISTLE BLOWS."

MR. EDITOR:—I noticed a few days ago, in a late number of the *Cotton Planter*, a letter from Mr. Peabody, of prolific corn and prolific strawberry notoriety, to the editor, stating that he had been for several years experimenting on cotton, and had at last produced something equal to long-staple in quality, and Dixon's Improved in productiveness.

Of course, this grows upon that same *poor* land, which made the big corn crops. I hope that our Sea Islanders will not get "skeered," and run off all at once. But, Mr. Editor, it bothers me to understand how these wonders all die out so quick. Where have the enthusiastic puffers of the Peabody Corn, Rescue Grass, Stanford's Wild Oat, Prolific Peas, and all such wonders, gone to?

I don't object to experiments—don't deny but great improvements may be made by selection and crossing, manuring and cultivation—but whenever a

man sits down to convince me that he can make a big crop of anything valuable on poor land, that will pay, I can't help thinking of the old saying, "It is hard to get blood out of a turnip."

RASP.

For the Farmer and Planter.

A GOOD CROP OF CORN.

HENDERSON CO., N. C.

MR. EDITOR:—Below you will please find a statement of a crop of corn, the product of a field of Glen Cannon farm (property of McKewn Johnston, Esq.).

About twenty acres of this field was put under cultivation for the first time in the spring of 1858—the balance the last spring (1859). The crop was planted the last week in April, in drills $3\frac{1}{2}$ feet apart. A good stand was obtained. On the 5th of June the entire crop was cut down by frost, and stand seriously injured. The crop received good cultivation.

The soil is a beautiful light loam, first quality French Broad bottom. No manure or other fertilizer has ever been applied to this field.

Should it be acceptable, we will give you an account of our farming operations from time to time.

We, the undersigned, by invitation, measured a crop of corn, as harvested from a field of Glen Cannon farm, (property of McKewn Johnston, Esq.)—The result was 2,875 bushels shelled corn, from 32 acres.

J. S. HANCKEL.

H. R. RUTLEDGE.

J. A. GADSDEN.

[The above is a most capital showing, and can be relied on as true. We shall be pleased to receive communications from our friends in the good old North State, upon the practical operations of farming in that section. Write, gentlemen, write, and set a praiseworthy example to the farmers of South Carolina.]

From the Country Gentleman.

CASHMERE GOATS.

Until recently, so little was known of this animal, that a variety of opinions was entertained among Naturalists with regard to its true name and locality. Of its oriental origin, there can be but little doubt, and that it was known to the Patriarchs for more than fourteen hundred years before the Christian era. We are told that, while Moses encamped at Sinai, special wisdom was given for the spinning of goat's hair for the curtains of the Tabernacle, which were adorned with hieroglyphic and emblematical figures; and that this passion for rich embroidering still exists among the Persians, is proved by their skill to this day.

The manufacture of shawls is believed to have originated in the valley of Cashmere. The ancient Caspura, situated in the north-west of India, between the 34th and 35th degrees of north latitude, and the 73 and 76 degrees east longitude—though not so flourishing as it once was, the manufacture

is still prosecuted in this province to a very considerable extent. They constitute an important part of eastern dress, in Asia, among the Arabs, people of Egypt and Persia, and many other countries, and are worn by men as well as women.

The real Cashmere shawls are woven by the natives of the country, and by the Hindoos, in a very simple manner, but become expensive from the slowness of the operation, requiring the work of four hundred days by a woman and two apprentices to complete one, which commands in the London markets from \$1,500 to \$2,500. The immense cost of these shawls in the European market, is therefore a subject of much wonder to those unacquainted with the history of their manufacture.

The material of which they are made is known to be a species of fine hair or wool, from a goat which is a native of Thibet. The wool is first combed from the goats in these mountains, and borne upon the back of a man for a long journey, through dangerous mountains and over deep precipices impassible by camels or mules. At Riligit the raw material is worth one rupee per pound, but before this precious burden reaches the confines of Europe, heavy taxes are exacted at various stages of their journey, nearly doubling the cost. The imperishable nature of the fleece from the animal, and the durability of the fabric, is a matter now about which there is no doubt. Dr. Davis, in his report to the Patent Office in 1853, assured us that he procured a pair of socks while in the east, made from the fleece of these animals, which he wore six years, which then appeared as good as when first used. He further informs us that while in Asia, he saw wrappers used by the natives which they assured him had descended from sire to son for three generations.

Great pains have been taken to introduce the Shawl Goat into France, and with considerable success. M. Goubert found them at various places from Cashmere to the Ural Mountains, from which he transported them to Crimea, and thence by sea to Marseilles. Though many died on the way, he arrived in France with a sufficient number to test their value in that climate.

It is proper to state that it was M. Ternaux who planned the importation, and furnished the means for executing it, at his own expense and responsibility. The goats have thriven and propagated in France, and shawls have been manufactured from them equal to Cashmere. The wool is also brought to Europe from Cashmere, by way of Cassan, the capital of a Russian province on the Volga. It is spun and woven in France, either mixed with silk or without. At first they succeeded in imitating the real Cashmere shawl only on one side, but now they are able to imitate perfectly the texture of the true Oriental fabric. Four of the Cashmere goats have been introduced into Essex, by Mr. Towers, of Neal Hall. A breed has been produced in France between the Angora goat and Cashmere, which promises great success, increasing the quality of wool, which is long, fine, and glossy, combining the softness of the Cashmere with the lustre of silk, being the most beautiful material known, and is now manufactured in various parts of Britain, particularly at Herdersfield, Norwich, and Paisley.—To the latter place fleeces have been sent from this importation.

We have now given some information in relation to

the introduction of these animals, together with some account of the immense labor and risk which have attended the importation of shawl wool, its uses and value. We will close the subject in our next letter—showing the number imported, by whom, propagated, &c.

R. WILLIAMSON.

From the Field and Fireside.

RHODES' SUPER-PHOSPHATE.

Analysis and Report of Rhodes' Super-Phosphate, by Prof. Shepard, of South Carolina Medical College.

CHARLESTON, Feb. 27, 1860.

MESSRS. RHETT & ROBSON—*Gentlemen*: The samples drawn by myself on the 24th inst, from a lot of 1500 barrels of Rhodes' Super-phosphate, gave, with very slight differences, the following average result, viz:

Soluble Phosphate (or Super-phosphate) of Lime,	15.50
Insoluble (or bone-earth) Phosphate of Lime,....	23.00
Hydrated Sulphate of Lime,.....	15.50
Organic Matters, (including Charcoal,).....	5.00
Insoluble Earthy Matter, (including Silica,).....	9.50
Free Sulphuric Acid, about.....	3.50
Water,.....	24.50
Other Salts, and loss,.....	3.50
	100.00

This agrees with former analyses as nearly as can be expected in a mechanical mixture of this description. The quantity of soluble phosphate, however, is rather higher, while that of the insoluble is less than in the previous lot. But I regard the proportions of soluble phosphates not found as fully up to the maximum of utility in such a preparation, since more of it, if present, would require too much free sulphuric acid for the welfare of living plants; besides, such a mixture, from too ready a solubility would be liable to be washed away and lost, in case of drenching rains. It is better to have the main portion of the phosphate in a condition (i. e., as bone-earth,) to be retained by the soil, so as to be more gradually supplied to the crops throughout the entire period of their growth, through the intervention of the carbonic acid water, always in contact with their more delicate roots, and especially abundant when the proper supply of compost is furnished in cultivation.

CHAS. UPHAM SHEPARD,
Prof. Chemistry in Medical College of
South Carolina.

Although the communication of Mr. Rhodes, and the remarks of Prof. Shepard in the *Charleston Courier*, are in the character of an advertisement, yet we publish both gratuitously, because we hope to make them instructive to our readers. In his first analysis, Prof. S. found 14 per cent of super-phosphate of lime in the manure of Rhodes & Co.; and in his last, as stated above, 15½ per cent. Prof. S., in commendation of this compound, says:

"It is better to have the main portion of the phosphate in a condition (i. e., as bone-earth,) to be retained in the soil, so as to be more gradually applied to the crops throughout the entire period of growth, through the intervention of the carbonic acid water, always in contact with their more delicate roots, and especially abundant where the proper supply of compost is furnished in cultivation."

If the planter supplies "compost" to his cotton

or corn plants, and this manure yields carbonic acid which will slowly dissolve bone-earth, why should the cultivator buy any super-phosphate? On the other hand, if the planter uses no compost, and his growing crop needs $15\frac{1}{2}$ lbs, or 31 lbs of soluble phosphate per acre, why should he purchase *forty-nine pounds of water*, at two cents and a half a pound, which he does not want, to obtain only thirty-one pounds of something which he does want?

Prof. Shepard reports $24\frac{1}{2}$ per cent. of water in a "mixture" that contains only $15\frac{1}{2}$ per cent. of soluble phosphate of lime. We are studying this "mixture" for the benefit of the public, without the least unfriendly feeling toward either the manufacturers or their agents who make money by selling it on commission. Mr. J. B. Lawes, of Rothamsted, England, advertises a super-phosphate of lime made of bone-dust, at six pounds six shillings a ton, of 2,240 lbs, which is understood to contain about twice as much phosphoric acid (soluble and insoluble) as that of Rhodes & Co. His mineral super-phosphate he sells at £5 5s., or at a fraction over \$26 for 2,240 lbs; which contains something more than 31 per cent. of soluble phosphate of lime.—Should there be any excess of sulphuric acid, it is easy to add lime and form gypsum.

Hence 100 lbs of pure mineral phosphate of lime may be converted entirely into a bi-phosphate of lime, which is soluble in water, and gypsum, which is also soluble. Burning a true bi-phosphate, and the natural bone-earth in phosphatic guanos, the farmer can mix them quite as well as any trader, or manipulator of commercial manures. Soils in which decaying plants yield much carbonic acid, will do well with finely ground, simple phosphate, like that used by Mr. Gardner last year on cotton; while soils poor in organic matter, will probably give a better return to use from 20 to 40 pounds of true bi-phosphate of lime per acre. To obtain the last named quantity, the planter will have to buy over 250 lbs of Rhodes' Super-phosphate, and to get 100 lbs of the most common, natural phosphate of lime, he must purchase 433 lbs of "the mixture." We do not say that this compound is not the best in the market, but we are quite confident that it will not be the best in one year from this time, according to the cost of the article. There is room for great improvement in commercial fertilizers; and the sooner this subject is fully discussed and understood by the public, the earlier will farmers find all the constituent elements of every crop placed within their reach at a low price as compared with present. We criticize to remedy defects—not to disparage the progress already achieved in preparing nourishment for agricultural plants in a concentrated form.—The $3\frac{1}{2}$ per cent. of free sulphuric acid found by Prof. Shepard, mixed with 23 per cent. of insoluble phosphate of lime, leads us to believe that the 1500 barrels of the so-called super-phosphate, a sample of which he analyzed, had been quite recently manufactured, and put in the market before the oil of vitriol had displaced all the phosphoric acid of which it was capable. Perhaps the sulphuric acid was too weak, or the bones were not ground fine enough, and perhaps the manufacturers found the demand for their "mixtures" so great as to take it away by the cargo before the acid had half digested the bone-dust. Food cooked in a hurry is generally damaged by being partly burnt and partly raw.

From the American Farmer.

PAUL PLANTS, APOLLOS WATERS, BUT GOD GIVES THE INCREASE.

In answer to your Carroll county correspondent, who wishes to know how to make forty bushels of wheat to the acre, I will state what has been my experience in wheat growing. I began the improvement of a very poor piece of land (the last cereal crop grown on it being 21 bushels of rye on 18 acres,) in the fall of '48. I limed it with 100 bushels of Baltimore county quick lime. In the spring of '49 sowed two bushels black peas; they made but a poor show. In the fall limed again with a like quantity. In the spring of '50 sowed with peas again, which grew very luxuriantly. In the fall of '50 plowed in the peas very deep—12 to 14 inches; rolled heavily so as to make a compact substratum; used 200 lbs of Peruvian Guano, and 20 bushels of ground bones to the acre, and obtained forty-two bushels of wheat—harvested in '51. I cut three crops of grass, (clover and orchard grass,) supposed to be $1\frac{1}{2}$ to 2 tons each crop. In '55 I had it in corn, and got 14 barrels (70 bushels shelled corn) to the acre. In spring of '56 sowed in peas, plowed them under in fall; used 200 lbs Peruvian Guano and 20 bushels of bones. In spring of '57 it bid fair to be a heavy crop, but began to fall back in May, and grew worse every day till harvest. This was owing to the fly, so destructive that year. So completely had the orchard grass got the upper hand, that I had to save the crop with a grass scythe; nevertheless, I got 21 bushels of wheat to the acre. In '58 and '59 I cut very heavy crops of grass, supposed two tons to the acre.

To show the application of the heading of these remarks, and the uncertainty of the wheat crop, I will state that, while my land is greatly improved in condition, over what it was when I produced the largest crops, and I have still used as much manure, yet in the past three years I have averaged but 22 bushels to the acre, on fields which had grown before, respectively, 42, 36 and $38\frac{1}{2}$. The corn and grass crops have continued to increase.

Respectfully, J. Q. HEWLETT.

TO KILL COCKROACHES.—Mix equal quantities of red lead and Indian meal with molasses, making it about the consistency of paste. It is known to be a certain exterminator of roaches. A friend, who was troubled with thousands upon thousands of them, rid his house of them in a very few nights, by this mixture. Put it upon iron plates, and set it where the vermin are thickest, and they will soon help themselves, without further invitation. Be careful not to have any article of food near where you set the mixture.

NEUTRALIZING POISON.—A poison of any conceivable description and degree of potency, which has been intentionally or accidentally swallowed, may be rendered almost instantly harmless, by simply swallowing two gills of sweet oil. An individual with a strong constitution may take nearly twice the quantity. This oil will most positively neutralize every form of vegetable, animal or mineral poison with which physicians and chemists are acquainted.

Horticultural and Pomological.

WILLIAM SUMMER, EDITOR.

MONTHLY TALK WITH OUR READERS.

"The flowers appear on the earth, the time of the singing of birds is come, and the voice of the turtle is heard in the land."

The return of May again brings over us a lively sense of the loveliness and delightfulness of flowers; they gladden the heart, they seize on our affections the first moment we behold them, and beauty and fragrance is poured out over the earth in endless varieties. The mock-bird, with varied notes, greets us during day—and even during the clear balmy evenings, and with the stillness of night cheers us with his varied song. The gardens, with roses of every hue, are perfect paradises, and are now becoming so common, that every one who has a love of flowers may enjoy their beauty and fragrance. The poet no longer sings of the roses of June, but from early Spring to chilly Autumn they lend us their charms, to cheer us and give pleasure to our pursuits.

This month, too, comes in with sweet and delicious Cherries and Strawberry, with its wholesome and abundant fruit, gives us the first fruits of Spring, and we are cheered with fresh hopes, as we toil from day to day.

The vegetable garden now gives us abundant supplies. *Early Cabbages* will now require frequent hoeings, and occasional waterings. When this becomes necessary draw away the earth carefully from around the plants, and give them a good watering, late in the evening, and the next morning. When the water has completely soaked away, draw up the dry earth around the plants, and you will be saved the trouble of watering again for a week to come.—Observe this method with other things that require watering. Mulching, with any kind of litter, such as saw-dust, decayed leaves or straw, will also serve to retain moisture, if necessary, around trees which have been transplanted in Spring.

Carrots, Parsnips, and all close crops, will require thinning out to proper distances, and should be carefully worked. If this is now properly done they will require very little more after-culture than to take out what weeds may spring.

Beets should now be well worked.

Onions will require the earth to be drawn away, so as to expose the bulbs, which increases their size.

The principal business now is transplanting.—This should, if possible, be done during showery weather, though most persons too often transplant when the ground is too wet. It is advisable to take up the plants and set the roots in water, in the shade,

until evening, then dip them in a rich puddle of best garden soil, and then transplant; they will thus take up sufficient moisture to wither very little the next day.

If it is necessary to plant *Melons*, &c., we would advise the seeds to be steeped for two or three hours in warm water, in which infuse saltpetre (one ounce to a pint of water)—sulphur is also good.

If you have anything in your garden that you desire to force forward, give it a good dose of soapsuds, with a little gypsum, twice a week, for the next month, and you will be sure to see your labor rewarded by a growth of the plant, that will more than fulfil your expectations. Be sure, in time of drought, to let nothing suffer for want of water. The smaller fruits, strawberries and raspberries, should be well watered during dry weather, to secure large crops of fine fruit. It is better to give a good watering once a week, than a mere sprinkling every day.

Pruning Orchards.—It is a very good rule, and the nearer it is followed the better, that no shoot should be allowed to remain longer than one year on a tree, that will require removal at any future time. By observing the form which a young tree should take, and rubbing or cutting off improper or unnecessary shoots in time, any very severe pruning at a subsequent period may be entirely avoided. The head and form of the tree should be regular, and the branches not too much crowded. A moderate share of care and attention to these particulars would ensure fair and uniform crops of Peaches and Apples, which now command good prices in our markets.—Good cultivation should be given in connection with judicious pruning. Now is the time that young orchards should be examined, and treated in the way we have pointed out. Take away all useless sprouts from about the roots of all kinds of fruit-trees; and after cleaning the roots of Peach-trees from worms, make small hillocks about the stems to prevent the *Egeria Exitiosa* from depositing its eggs about the roots. A sheathing of strong hardware paper, wrapped about the stem for 12 or 18 inches, will answer the same purpose.

In the Shrubbery, as well as the flower garden, too much care and attention cannot be given. See that everything is neat and clean, upon which much depends of general success and handsome effect.—Under this is included weeding, hoeing, and raking walks and borders.

BENEFICIAL EFFECTS OF FLOWER CULTURE.

The interest which flowers have excited in the breast of man, from the earliest ages to the present day, has never been confined to any particular class of society or quarter of the globe. Nature seems to have distributed them over the whole world, to serve as a medicine to the mind, to give cheerfulness to the

earth, and to furnish agreeable sensations to its inhabitants.

The savage of the forest, in the joy of his heart, binds his brow with the native flowers of the woods; whilst a taste for their cultivation increases in every country, in proportion as the blessings of civilization extends. From the humblest cottage enclosure to the most extensive pleasure grounds nothing more conspicuously bespeaks the good taste of the possessor, than a well cultivated flower garden, and it may very generally be remarked that when we behold an humble tenement surrounded with ornamental plants, the possessor is a man of correct habits, and possesses domestic comforts; whilst, on the contrary, a neglected, weed grown garden, or its total absence, marks the indolence and unhappy state of those who have been thus neglectful of Flora's favors.

Of all luxurious indulgences, that of flowers is the most innocent. It is productive not only of rational gratifications, but of many advantages of a permanent character. Love for a garden has a powerful influence in attracting men to their homes; and on this account, every encouragement given to increase a taste for ornamental gardening is additional security for domestic comfort and happiness. It is likewise a recreation which conduces materially to health, promotes civilization, and softens the manners and tempers of men. It creates a love for the study of nature, which leads to a contemplation of the mysterious wonders that are displayed in the vegetable world around us, and which cannot be investigated without inclining the mind towards a just estimate of religion and a knowledge of the narrow limits of our intelligence, when compared with the incomprehensible power of the Creator.

Flowers are, of all embellishments, the most beautiful; and of all created beings, man alone seems capable of deriving any enjoyment from them. The love of them commences with infancy, remains the delight of youth, increases with our years, and becomes the quiet amusement of our declining days. The infant can no sooner walk than its first employment is to plant a flower in the earth, removing it ten times an hour to where the sun seems to shine most favorable. The school boy, in the care of his little plot of ground is relieved of his studies, and loses the anxious thoughts of a home he may have left. In manhood, our attention is generally demanded by more active duties, or more imperious, and perhaps less innocent occupations; but as age obliges us to retire from public life, the love of flowers, and the charms and delights of a garden return to soothe the latter period of our life.

To most persons, gardening affords delight as an easy and agreeable occupation; and the flowers they

so fondly rear, are cherished from the gratification they afford to the organs of sight and sense; but to the close observer of nature, and the botanist, beauties are unfolded, and wonders displayed that cannot be detected by the careless attention bestowed upon them by the multitude. In their growth, from the first tender shoots which rise from the earth through all the changes which they undergo, to the period of their utmost perfection, he beholds the wonderful works of creative power: he views the bud as it swells, and looks into the expanded blossom, delights in its rich tints, and fragrant smell, but above all, he feels a charm in contemplating movements and regulations, before which all the combined ingenuity of man dwindles into nothingness.

THE DAHLIA---ITS HISTORY, CULTIVATION, AND NEW VARIETIES.

MR. PARKER BARNES has contributed a valuable article on this magnificent ornamental plant, to the transactions of the Massachusetts Horticultural Society, which we extract entire for the benefit of our lady readers. We have omitted Mr. P. BARNES' list, and substituted our own, preferring to give those with which we are familiar. A show of Dahlias in September and October, after the more delicate flowers have exhausted their blooming powers, is an attractive sight, and mingling their bright hues with the dying autumnal tints of others, adds charms to the flower, unattainable by the use of any other plant. Our climate, and Indian-Summer weather, developes the flowers of this plant to the utmost perfection and beauty.

The early history of this popular flower is involved in some obscurity; but from the mass of matter we have fortunately been able to cull a few facts, which it may be useful to present before proceeding to the more practical part of our article.

The first account we have of this flower is its mention in Hernandez's History of Mexico, printed in 1651, in Madrid, in which two species are figured under the name of "Acocotli;" both are single flowers—one probably *Dahlia crocata*, the other *variabilis*.

An Italian work on the Natural History of Mexico was published in Rome, about the same time, in which two Dahlias—one single, the other double—were figured under the name "Cocoxochitl." In these works the roots are described as tuberous, and of a bitter taste.

The next notice is by Thierry Menonville, who was sent to Mexico by the French Government, in 1787, to procure the cochineal insect and its plant. He saw some Dahlias near Guaxaca, and described them as having large aster-like *double* flowers, stems as tall as a man, and leaves like an elder.

In 1789, *Dahlia variabilis* was discovered in a wild state in Mexico, by Humboldt, and sent by him to Madrid. Seeds were, the same year, sent from Madrid to the Marchioness of Bute.

A seedling, semi-double, flowered in 1790, and was figured in *Icones Plantarum*, when the genus

was named Dahlia, in honor of Andrew Dahl, a Swedish botanist, and the plant (now *Dahlia variabilis*) called *Dahlia pinnata*. In the same work, *Dahlia rosea* (now lost) and *Dahlia coccinea* were afterwards figured.

Plants and seeds were sent to Paris, 1802, with the idea they might be edible. The seeds sent to the Marchioness of Bute, though vegetating, never produced any result of importance, and the plants were soon lost.

In 1802, an English gardener, named Fraser, obtained seed from Madrid which produced orange flowers (probably seedlings from *Dahlia coccinea*).

In the autumn of 1803, *Dahlia rosea* flowered in England. In 1804, a paper was published in the "Annales d'Histoire Naturelle," by M. Thouin, in which he suggests propagation by division of the roots, and allowing them to rest during the winter, growing the roots in rich soil during the summer.

In 1804, Lady Holland sent seeds of *Dahlia variabilis* and *Dahlia rosea* and *coccinea* from Madrid to England. These were sown in hot-beds, and a few flowers were produced; these, by much care and nursing, ripened a few seeds in 1805 (the first ever produced in England), which produced plants the next year. All the experiments thus far had been made in the greenhouse. In 1807, Dahlias were first grown in the open ground. About this time an attempt was made to change the name from *Dahlia* to *Georgina*. About 1808, it was cultivated around Paris, and fine seedlings raised. Fine varieties were raised in Berlin soon after; and in 1814, there were many fine double flowers in cultivation, and since that time the plant has been successfully cultivated in England. We are unable to state at what time this plant was introduced to our gardens, but till after the year 1830 it was not grown to any extent, if an inhabitant of our gardens.

Every florist has been at some period attacked by the Dahlia fever, and the plant has in the past been a great favorite. It must, from its many desirable qualities, always be popular, though at the present time it seems to be a little out of favor.

Dahlias are of every color and all shades, *except blue*, which has never been obtained. In estimating a modern dahlia, form, color and size, are the requisites; in form, the flower should be round, without a centre, the large flowerets at the edge gradually growing smaller. The color should be bright and clear. The size should be up to the average of dahlias, of the variety of that exhibited.

It may be useful to briefly mention a few of the original dahlias.

Dahlia variabilis, or *superflua*, the origin of all the dahlias. It is a "reddish purple" flower, with eight florets, and a yellow disk; the seedlings are single, double, and semi-double, and of every color and shade, pink, crimson, scarlet, buff, salmon, yellow and white. A native of Mexico.

Dahlia coccinea. Color dull red; the seedlings only vary to orange or yellow, and this variety does not hybridize with the last described.

Dahlia crocata. Flowers brilliant scarlet, with yellow disk.

Dahlia Barkerri. Allied to *D. glabrata*, below described.

Dahlia excelsa. Often grows 30 feet high, tall, without branches, but with broad leaves. Native of Mexico. Anemone-flowered.

Dahlia glabrata. Flowers lilac, semi-double. A native of Mexico.

Dahlia Cervantesii. Flower orange-scarlet.

Dahlia astantæflora. The parent of the anemone-flowered dahlias.

Dahlia scapigera. A beautiful little white variety, with thick, fleshy flowers, one to two feet high.—Native of Mexico. No double flowers have, we believe, been raised from this variety.

There are other varieties of the original *Dahlia* which might be described, but they are not in cultivation, so we proceed with our subject, the treatment of our modern dahlia.

SOIL.—My experience is in favor of a compost made of old black garden mould, stiff loam, and sandy peaty loam; trench the bed twenty inches deep; the finest flowers are produced with the least trouble in a rich soil, for the *Dahlia* is a gross feeder, though not fond of unrotted manure. Any garden soil will grow this flower, but by a little attention to the soil a great improvement in both the quality and quantity of the bloom will be produced.

PLANTS AND PLANTING.—My experience has shown that plants struck from cuttings produce the most perfect flowers, the blooms being less inclined to become semi-double than those borne on plants grown from tubers; the latter often produce very coarse flowers, and are always of a stronger growth. The cuttings should not be rooted so early as to become pot-bound before the time arrives to turn them into the border; if the roots are strong and numerous enough to keep the ball of earth from breaking, it will be sufficient. By the autumn, the tubers become large and solid enough to keep well during the winter, and in the spring the eyes break more freely.

The plants should be set three feet apart between the rows, and two and a half feet in the rows.—*Shade of every kind is injurious to the plants.*

The ground being prepared by trenching, as above directed, choose straight spruce poles (which are the strongest and most durable) and stake the whole bed; let the poles be seven and a half feet long, and be driven into the ground one and a half feet; then plant your dahlias, one plant to each stake; the plant should be set about one inch lower than the surface of earth in the pot, if the plants have been struck from cuttings; if from tubers, place the crown of the tuber two inches below the surface.—Dahlias may be planted from the first of May to July; those latest-planted give the *best* flowers, though, of course, do not afford as early or profuse a display. *Dahlias may flower two early*, and the blooms be burned up by the hot summer's sun; then before autumn the plant is exhausted, and no good flowers are produced. A dahlia should not begin to flower before the latter part of August, for cool nights are essential to the production of fine flowers.

The plants should be tied to the poles with soft bass matting, and should be carefully and frequently examined for this purpose; a high wind will often break the plant and destroy its symmetry and beauty.

PRUNING.—No arbitrary rule can be prescribed; the plant should never be allowed to become bushy with small branches, nor should severe pruning at any time be resorted to. Prune little but often, is a good rule. Varieties differ as to the amount of pruning required, and experience alone will teach the amount beneficial to each.

Some varieties produce too many flower-buds, and

consequently all the flowers are small or imperfect; when the buds are small many may be removed to advantage; after they have attained any growth, however, this operation is of little benefit; in this, experience must also be the teacher.

INSECTS:—There are many insects injurious both to the stem, leaf, and flower of the dahlia; I shall, however, only mention a few of those which prove most destructive in our climate.

The grasshoppers (*Gryllidæ* —) do much damage to the blooms by eating off the lips of the petals. To remove them by hand is difficult and wearisome; the best remedy is to turn some turkeys or domestic fowls into the dahlia plantation about the middle of August.

The striped squash bug (*Galeruca vittata*), and a small oval bug (*Pentatoma* —), destroy many flowers; they live in the bloom and eat holes in the floral rays, seldom leaving the flower till it is ruined. The remedies for these latter are unknown, for the flower is destroyed by the application of lime, &c. Fine blooms, or those which promise well, may be protected by a covering of gauze or lace; but this is too expensive and laborious an operation to be performed in a large plantation.

WATERING:—Is never beneficial to the plants, not even in dry weather, unless persistently continued, for it has a tendency to bring the roots to the surface, and when the water is withheld the plants suffer from the change. If the dahlias are to be watered, the ground should be mulched with coarse litter of some kind, or sea-weed; this will better retain the moisture, and will prevent the earth around the plants from becoming hardened. Syringing the tops with soft water is of advantage; let it always be done in the evening; care should be taken *not* to use very cold water.

SELECTING BLOOMS FOR EXHIBITION.—This is often a difficult task to the most experienced, and often one or more points have to be sacrificed. To my mind, diversity of color should be a matter of attention, with, of course, a due regard to form and size. A stand of flowers of similar colors never shows as well as one where some attention has been given to a selection of dissimilar varieties. The general rule, as before laid down, is, form before anything; next, color, which should be bright and clear; and, lastly, size. The blooms should never be handled or exposed to rough usage more than necessary, as the dead appearance thus produced can never be removed.

FANCY DAHLIAS.—These have lately become popular, as many very fine varieties have been produced. Miss Church, Loveliness, Lady Popham, and many others, are quite as fine as any of the selfs; they are perfect gems, and creditable to any stand of show blooms.

It seems to me that the best effect is produced when the two classes are exhibited in the same stand; the contrast is pleasing, and each cause the other to appear to greater advantage.

DEGENERATION.—A double flower being a monstrosity, there is always more or less tendency to revert to the primal state. With dahlias this disposition is particularly marked. It has always been my practice to keep a good old variety, if possible, till a better of its shade or color was produced; yet among a collection of 250 not more than five, new five years ago, can now be found.

A striped or mottled, or other fancy dahlia, will

often produce self-colored flowers, and all, both fancies and selfs, will in time so far run out as to produce single self-colored flowers.

SEEDLINGS:—Are grown largely by florists in England and on the Continent. Much attention has been given to hybridization during the last fifty years; but, as in other plants, many of the seedlings are worthless, and most not superior to those already grown. About six very fine seedlings in a thousand is considered good success.

These fine dahlias, when brought to this country, are often worthless, producing poor flowers on account of the difference of the climate.

In this country very few good seedlings have been produced, probably because there is less attention paid to hybridization, and no encouragement is offered by our Horticultural Societies.

WINTERING.—Take up the tubers soon after the frost has killed the tops; do not separate them, but pack them away in a dry cellar in dry loam, out of reach of the frost, till wanted for propagation in the Spring.

In taking a retrospective view of the dahlia fancy we find a gradual improvement up to the present time. Of late years many of the finest varieties have been produced, and a really fine seedling commands as high a price now as at any former period.

The dahlia is eminently worthy of attention, on account of its cheapness, its ease of cultivation, and the rich display it makes in the garden when other flowers are gone.

[We have cultivated the following varieties with eminent success, having imported them from France, Belgium and England. We have also many new varieties on trial, which will be tested the present season :

Antoinette Chelman, purple, tipped white.
 Antagonist, white, superb.
 Abbe Boquillion, scarlet, tipped with white.
 Adeline, yellow, striped with cherry.
 Admiral Stafford, scarlet.
 Amazone, yellow, tipped with carmine.
 Annie, unsurpassed lilac.
 Atraction, clear white, laced with amaranth.
 Alexandre Leroy.
 Ajah Leroy, rich crimson.
 Anibel Miguet, rosy lilac.
 Amphotite, buff, striped and specked with purple.
 Aurora, rosy salmon.
 Barmaid, white, with pink edge.
 Buffoon, scarlet mottled.
 Baron Chenau, scarlet.
 Baron Villers, purple lilac.
 Beauty St. Marceau, fine form.
 Beauty of Bath, clear yellow.
 Belle de Paris, fine rosy lilac.
 Beauty of the Grove, buff, with carmon edge.
 Baron von Eakins, crimson striped.
 Baron Triton, light salmon.
 Brilliant, superb scarlet.
 Brentono, purple.
 Baron Alderson, bright orange, tipped white.
 Bishop of Herreford, rich dark velvet.
 Belle Blonde, white, shaded with light purple.
 Bombe de Sebastapool, saffron fine.
 Bonnat, rich rosy purple.
 Beauty de Sansey, rich velvet crimson, fine.
 Beauty of Maer, cherry red, edged with deep crimson.

Beauty of Provins, finest lilac.
 Belle Zail, white, specked purple.
 Breydse, rose, tipped with deep crimson.
 Constaney, yellowish buff, tipped with red.
 Count de Flanders, rich rosy purple.
 Cemet, yellowish, with pink edge.
 Col. Baker, clear, sulphur yellow.
 Claudia, rich purple, mottled white.
 Coekattoo, deep purple.
 Coquette de Guifnard, white, shaded with pale lilac.
 Coquette de Bugney, lilac.
 Compte de Chambourd, white, tipped with purple.
 Criterion, salmon, shaded with rose.
 Chamelion, white and bug.
 Euehess de Aremberg, fawn, shaded with light purple.
 Earl Clarendon, scarlet.
 Elizabeth, amethyst lilac, tipped white.
 Empress, white, shaded with lilac.
 Fire Column, dazzling crimson.
 Edouard Billon, light rosy purple.
 Emile, rich yellow salmon.
 Favorite, lilac, quilled fine.
 Gem of the Grove, deep purple, crimson.
 Gen. Faucher, cinnamon, shaded crimson.
 Grandissima, buff mottled, purple lilac.
 Glory, superb scarlet.
 Gen. de Guyon, deep cherry red, shaded.
 Gen. Tom Thumb, rich crimson, fine, dwarf habit.
 Gasparin, dark velvet, nearly black.
 Grosvenor, rose, flaked with cherry, edged white.
 Graf von Shariberg, buff tipped with cherry.
 Gros Helvesteen, rich salmon.
 Grand Durr, crimson petals, edged white.
 Harry Cargel, violet crimson.
 Hoste,
 Hertegan von Brabant, white shaded.
 Indispensible, yellow, tipped with golden saffron.
 Jaune de Passy, light yellow.
 Jaune de Marseille, superb yellow.
 Jules Jaunes, rich crimson.
 Kant, pure white.
 Kleber, rich purple.
 La Phare, scarlet.
 La Roserie, rosy lilac, tipped with crimson.
 Lady Mary Laboneher, white, edged with lavender.
 Lady Folkstone, buff, tipped purple.
 Lady Catheart, blush, laced with lilac.
 Lady Flora, yellowish, tipped with crimson.
 Lutea Alba, yellow and white.
 Louise Ebling, lilac, quilled.
 Le President, exquisite buff, beautiful.
 Lechetende von Koslitz, fine, salmon quilled.
 Le Deji, fine salmon, shaded with cherry.
 Miss Newman, white, beautiful.
 Miss Fauny Moreeau, lilac, purple mottled.
 Miss Mead, rosy lilac.
 Miss Mather, superb lilac, edged white.
 Miss Wentworth, purple lilac.
 Miss Susan Sainsbury, white, rosy tipped.
 Miss Caroline, white, tipped with lavender.
 Mrs. Charlotte Mason, blush and white.
 Miss Blackmore, stained white, purple edge.
 Miss Bathurst, lilac, tipped with white.
 Madame Zopher, buff, edged with amber.
 Madame Dressens, rosy purple, mottled white.
 Madame Hansard, yellow, tipped with clear white.

Mont Blane, large, clear white.
 Madona, satiny lilac, superb.
 Model, white, shaded with rose.
 Maria, rosy salmon.
 Maria Christine, rosy lilac, beautiful.
 Madame Anceun, light purple, flecked with deep rich purple fan.
 Madame Berelion, pale rosy lilac.
 " de Assey, buff, light cherry.
 Mademoiselle Eugenie Buhler, deep lilac, quilled.
 " de Abbe, rosy lilac.
 " Mietulet, rosy lilac.
 " Gaudry, crimson.
 ----- Balory, rosy lilac.
 Mademoiselle Ricard, fine light rose.
 Marquis de Le Foree, light purple.
 Monsieur Fort, rich purple maroon.
 Monsieur Langlors, rosy purple, edged white.
 Marshal de St. Arnaud, buff, edged with crimson.
 ----- Couvereaux, rich purple, variegated.
 May Bethany, rich crimson velvet.
 Migmonette, rich golden salmon.
 Mutabalis, changeable crimson.
 Mrs. Rusolings, white, shaded with pink.
 Marie de Brandois, rich crimson, shaded purple.
 Madame F. Henrig, yellow, flaked with cherry.
 Napoleon III, rich crimson.
 Nepaulese Chief, yellow and crimson.
 Picotee, dark velvet, mottled white.
 Plymouth, golden crimson, shaded with white.
 Phenix, rich crimson.
 Princess Wagram, showy bright orange.
 Port Royal, amber, edged with crimson.
 Painted Lady, amber striped white.
 Purista, rich salmon, shaded.
 Piccola, white, tipped with purple.
 Princesse Camilla de Rohan, dark scarlet.
 Phoebus, rosy scarlet.
 Reine des Belges, dark lilac, striped with crimson.
 Rosea Elegans, rosy lilac.
 Rose of England, blush.
 Roundhead, buff.
 Rainbow, rosy salmon, tipped white.
 Richard Cobden, crimson.
 Sir R. Whittington, dark crimson.
 Sarah, mottled, violet and crimson.
 Star of Meidling, yellowish buff.
 Satirist, dark purple.
 Scarlet King, scarlet.
 Sonne Von St. Louis, dark purple.
 Starr Brag, rosy purple.
 Surpasse Bethanis, dazzling crimson.
 Sir Rof Whittington, white rosy lilac.
 Triumphe de Asg, rosy purple, fine quilted.
 Triumph Robaiz, buff, edged with salmon.
 Triumph de Essones, rich rosy salmon.
 Toison de Or, golden orange.
 Tom, crimson and bronzed.
 Unanimity, yellow, flanked with scarlet.
 Victoire de Alma, rich deep scarlet.
 Victorine, deep, rich purple.

HOW TO MAKE HOMINY BREAKFAST CAKES.--Mash the cold hominy with a rolling pin, and add a little flour and milk batter, so as to make the whole thick enough to form into little cakes in the hand, or it may be put on the griddle with a spoon. Bake brown, eat hot, and declare you never ate anything better of the batter kind.



HOVEY'S SEEDLING.

We have the pleasure of presenting our readers with a good cut of this superb Strawberry, which was produced from seed by Messrs. Hovey, of Boston, in 1834. For our climate it is one of the finest of all varieties. The vines are unusually vigorous and hardy, producing very large crops; and the fruit, when properly cultivated, is always of the largest size and finely flavored. It is now generally disseminated, and has everywhere proved superior, for all general purposes, to any of the large fruited kind. The leaves are large, rather light green, and the fruit-stalk long and erect—fruit very large, roundish oval, or slightly conical, deep shining scarlet, seeds slightly imbedded, flesh firm, with a rich agreeable flavor. It commences ripening in favorable season—the first of May—and continues, if seasonable, or if regularly watered, to bear for several months. The flowers of this variety are pistillate, and in order to secure a good crop of fruit, it is necessary to place a staminate variety in the vicinity, say every fourth row, and for this purpose the Early Scarlet will be found one of the best.

THE VEGETABLE GARDEN.

MESSRS. EDITORS: The “kitchen garden” is much neglected. Most farmers pay but little attention to the cultivation of vegetables for the table, and what is attempted is done in the most imbecile manner. Some people seem to think a wheelbarrow of manure is thrown away by being put on the garden. All that is done, in many cases, only assists to make a rank growth of weeds. The garden, like all other matters of business, to be successful, requires promptness. The work must be done in the right time, and well done, too. It must be manured and deeply cultivated, and this will generally insure a good harvest. We know of some farmers that think

the cultivation of a small patch as a garden is beneath their dignity—rather small business. They have no particular dislike to the cabbage, beet, parsnip, &c., if they are well cooked, but they dislike the work necessary to raise them. Now, we believe there is no other spot on the farm, of equal extent, that pays so well for the labor bestowed upon it as the kitchen garden, if the work is done well, and in the proper season; and not an equal number of rods on the farm that contributes so much to the support and health of the farmer and his family as the garden. A small piece of meat, with the cabbage, beets, carrots, &c., will constitute a good healthy meal for a large family, at a very cheap rate, much cheaper than is obtained from the broad acres.

There is an old saying, and a true one, “that a small garden, well cultivated, will half maintain a small family.” We must remember it is to be well cultivated, the weeds not allowed to sap all the nourishment from the plants. If it will not be out of place, we will relate our system of gardening. Having but little help, we have to economize what labor we can in the working season. We cultivate as a garden about four square rods of land, of a moist deep soil, situated so that the team can turn on the grass at each end. As soon as it is dry enough in the spring to work, manure well; we plow as deep as the plow will work, and in two or three days, give it a good harrowing, and let it lie till about the first week in June, or when the ground is suitable to work. We then take a plow, and begin to back-furrow in the centre of the patch. After going out and back, we rake the furrow down, smooth the clods, and throw small stones into the bottom of the furrow out of the way. We then go round again, and rake down as before, till the patch is completed. We now mark off the drills by a stick with three pegs, driven in seventeen inches apart, drills running north and south, so that the sun will

fall in between the rows at mid-day. Then we sow the seeds by hand, and cover with the hoe. By late sowing beets and carrots grow with great vigor, and soon cover the ground, and prevent the growth of weeds. We generally weed but twice, which is mostly done with a hoe, and suffer no weeds to go to seed.

The finest beets and carrots that ever we raised for winter and spring use, were sown the 20th of June. On this small patch of land, we raise sufficient for our family, and have a surplus for stock, being fully satisfied that there is no spot on the farm of equal size that pays so well for the labor bestowed on it. We adopt a system of rotation, sowing beets one year and carrots the next, &c., with the exception of onions, which we cannot raise on this spot.

D. L. H.

DRIVING BEES---BEE HIVES.

The barbarous and wasteful practice of suffocating or destroying the bees for the purpose of taking the honey, would also be abandoned, if it were generally known with what facilities the bees may be driven from one hive to another. If this is done at the proper season, say about the first of June, after all swarms have been sent forth, time will be allowed them to make ample provision for support through the winter. We have often succeeded in driving them, by taking the hive and inverting it on the stand where it stood, and placing the new hive over it; a strong smoke applied at an opening below, and by rapping the hive for some ten minutes, will cause them to ascend into the new hive. A cloth should be securely wrapped around the two hives at the place where they are joined, to prevent any of the bees from escaping; but as we have experienced, occasionally, considerable difficulty in effecting this object, we are inclined to the opinion that the following plan is preferable; we have taken it from a paper published some years ago at Natchez. The writer says:

"Having succeeded in my attempts at driving bees, I now propose to make known, for the benefit of those interested, and with a view to the preservation of this industrious and valuable little insect, the simple and effectual mode of operation I have pursued, premising that the only difficulty I have experienced is not in transferring them from one hive to another, but in reconciling them to their new habitation. The hive should, therefore, be scrupulously clean and sweet. This, however, all know to be equally necessary in taking a new swarm. Having determined on the hive to be driven, place on the ground in front of the stand on which it is fixed, and within eight or ten feet of it, a box or block twelve or eighteen inches high. By the side of this, the most remote from the hive, kindle a small fire, using scraps of old dry leather—old worn-out shoes will answer as the principal article of fuel; provide a sufficient quantity of cut grass, damp straw, or green Spanish moss, in order to keep down the blaze, and produce as dense a volume of smoke as practicable. This done, remove the hive from the stand to the box near the smoke, placing the new hive immediately on the same spot on which the old one stood; then remove a part or the whole of the top or head of the hive, to be taken and placed as nearly over the smoke as can be done conveniently. By placing a short piece of plank on each side of the fire, and in connection with the box on which the hive stands,

the smoke may be readily driven through the hive, and with it the bees. These, as they escape from the top of the old hive, direct their flight at once to the stand from which they were removed, and take refuge in the new hive placed for their reception.—The whole operation is performed in a few minutes, and is best done in a damp, drizzly day, or about twilight in the evening.

Construction of Hives.—We have tried various hives, among them some of the best patent hives, but these are usually too complicated, and the wooden palaces have only proven a harbor for the *bee miller*, and have generally been abandoned. Hives should be made uniform, and one of the best which we have used is made of good seasoned pine, one and a quarter inches thick, put together perfectly tight at the joints, planed but a trifle on the inside, and none on the outside, containing one cubic foot clear on the inside, the lower edge to be chamfered, on the inside, down to one quarter of an inch in thickness, with an aperture in front, (for ingress and egress of bees,) four inches long and three-eighths of an inch high. In the top (which should project one inch all around) cut an opening through the middle, one inch wide and six inches long, running from back to front, for passage of bees from one hive to the other.—When the hive is filled with comb, stop up all the passages, and place an empty one (with top aperture open) immediately below it, (we prefer this to placing it on top;) this will soon be filled, when it may be taken away, or a third one placed beneath.

The comb should be entirely removed the third year from its deposit, as bees will not flourish in it afterwards, and only serve as a harbor for insects. Small blocks of wood one inch square, are a good support to the corners of the hive; in summer, let them be well soaked in spirits of turpentine, which is offensive to the moth. Bees require air and ventilation as much as human beings, and thousands are lost annually by too close confinement; if the hives are let down on the bottom board in winter, leave the aperture in the top open, covering it with wire gauze or perforated tin to keep out cockroaches, &c.

When bees are first hived, keep them shaded and out of the intense rays of the sun, the heat of which frequently causes them to come out and take to the woods. In separating the hives or tiers, insert a sheet of tin to cut or detach the comb; take the part you wish to remove, fifteen or twenty feet distant, reverse its position, and if a few bees remain, rap the sides gently with a stick, and they will soon take their departure to their original location. The hives should be made uniform, so that any one will fit, and bees managed on this alternating principle, will be found to succeed well. The hives should be washed once or twice a year with a wash made of the best stone lime, potash or strong ley, copperas, to which add salt and clean sharp sand, to fill up the cracks and crevices. Make these materials into the consistency of common paint, and with a whitewash brush cover the sides of the bench the hives stand upon, being careful to fill every crevice and crack. Go over the outside of the hives in the same manner.—The moth will not lay her eggs in contact with this composition, as the cold and caustic composition destroys the vitality, should they be deposited; but if the worms have gained access to the hives previous to the application, nothing will save them. Keep the bottom board of the hives well sprinkled with fine salt during the summer months.

Domestic Economy, Recipes, &c.

CHERRY BOUNCE.—Mix together six pounds of ripe Morellos, and six pounds of large Black Heart cherries; put them in a clean wooden vessel, and with a pestle or mallet mash them. Mix with the cherries three pounds of loaf sugar, and put them into a demijohn, or into a large stone jar; pour on two gallons of the best rectified whisky; stop the vessel closely, and let it stand three months, shaking it every day during the first month. If the stones have been cracked and put in, it is thought by some that the flavor is improved. At the end of three months you may strain the liquor and bottle it off. It improves by age, or the juice may be obtained at once, as recommended for cordial, and the whisky added, equal parts of each.

CHERRY SHRUB.—Pick and stone a sufficient quantity of ripe Morello cherries, or other red cherries, of the best and most juicy description; put them with all their juice, into a stone jar, and set it, closely covered, into a deep kettle of boiling water; keep it boiling hard for a quarter of an hour; then pour the cherries into a bag, and strain and press out all the juice; allow a pound of sugar to a quart of the juice, boil them together ten minutes in a preserving kettle, skimming them well, and when cold, bottle the liquid and seal the cork. By first putting a gill of brandy into each bottle it will keep during the summer. It is delicious mixed with water.

ANOTHER WAY.—Take as many cherries as you desire, cleanse and squeeze them, then leave them for 24 hours; after which carefully strain them, and add twice as much sugar; put all in a kettle, stir them well, place the kettle on the fire, and as soon as it commences to boil and froth, remove it—skim off the froth. Then bottle and cork it. In this way currant, orange, and pomegranate syrup may be made.

CURE FOR GAPES IN CHICKENS.—I have tried the following plan, and found it a certain cure for gapes in chickens. Take a medium sized broom splint, with a sharp knife make two or three barbs near the large end. Open the mouth of the chicken, having its neck drawn straight, and, as the wind-pipe is opened for breath, put in the instrument, and, running it carefully down the full length of the wind-pipe, turn it around and draw it up, when one or more small red worms, an inch in length, will be found caught in the barbs. I have taken out four worms at one insertion. Two or three operations are often necessary, but if faithfully performed, the remedy is sure.—*American Agriculturist.*

MIXTURE FOR A COUGH OR COLD.—Take one teacup of flax seed, soak it all night. In the morning put in a kettle two quarts of water, a handful split up of licorice root, one quarter of a pound of raisins broke in half. Let them boil till the strength is thoroughly extracted, then add the flax seed, which has been previously soaked. Let all boil half an hour more, watching and stirring that the mixture may not burn. Then strain, and add lemon juice and sugar to taste. Take any quantity cold, through the day, and half a tumblerful warm at night. The above is a most excellent receipt.

RICE BLANCMANGE.—This forms an excellent accompaniment to preserves of any kind, or to baked apples. It is made as follows:—Put one teacupful of whole rice into half-a-pint of cold water; when the rice cracks, or begins to look white, add one pint of milk, and a quarter of a pound of loaf-sugar. Boil it until the rice has absorbed the whole of the milk, stirring it frequently the whole time. Put it into a mould, and it will turn out when quite cold. If preferred hot, it may be *again* made warm by being placed in the oven for a short time. It may be flavored with lemon, cinnamon, &c., but is most wholesome without, and forms both an elegant and very economical dish at any time.

PRESERVED CHERRIES.—Take cherries before dead ripe, allow a pound of white sugar to a pound of fruit; dissolve and boil the sugar—having it thick—put in the cherries with the stones in, and let them boil till transparent. Tie them up in glass jars.—The Carnation, and common light red, if done carefully, will be so transparent the stones may be seen through them.

To preserve them without the stones, take such as are very ripe, push out the stone carefully with a darning needle, make syrup of the juice, and then boil the cherries to a thick consistency.

CHERRY CORDIAL.—Take a bushel of fine ripe Morello cherries, to which add other sweet juicy cherries, if you have them, stone them, put them into a clean wooden vessel, and mash them with a mallet or beetle; then boil them about five minutes and strain out the juice. To each quart of juice allow a quart of water, a pound of sugar, and a quart of brandy. Boil in the water (before you mix it with the juice) two ounces of cloves, and four ounces of cinnamon, then strain out the spice. Put the mixture in a stone jug, or demijohn, and cork it tightly. Bottle it off in two or three months.

FOR PICKLING WALNUTS.—The Walnuts should be gathered between the first and middle of June. Put them into a strong brine and let them stand ten or twelve days. Then soak them for two or three days in weak vinegar. Then scrape them well, and to every peck of walnuts add an ounce of cloves and half an ounce of whole black pepper. Put them into a small mouthed jar and cover with strong vinegar. They will be fit for use in about four weeks. They are a very nice pickle, and will repay the labor of making.

DYSPEPTIC PUDDING.—Take clean rye (or wheat) and grind it in a coffee mill (or other mill,) very coarse, then put it in an enameled stew-pan and stew or cook in a very little water, adding more occasionally, as it stews out or grows too thick. Have enough water in at first to make it pour easily. Some other dish may be used to cook it in, if it is kept tightly covered, and cooked very slowly, half a day or more. When done, salt a little and serve with sweetened cream. This is an excellent dish for others as well as dyspeptics.

SODA CAKE.—Four cups of flour, three of sugar, one of butter, one of milk, five eggs, one teaspoonful of cream of tartar, half teaspoonful of soda; add nutmeg and fruit to taste; put in the milk just before setting in.